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SOAP

and SANITARY CHEMICALS

1951 BLUE BOOK

and Catalog Edition

• • • • •

Annual Buyers' Guide

for Manufacturers and Jobbers of Soaps, Detergents, Chemical Specialties, Janitor Supplies and Equipment.

For these and other fields — DAIRY • LIVESTOCK • FOOD PROCESSING • FOOD HANDLING AND STORAGE • AEROSOLS • HOUSEHOLD

Pyrenone*

Versatile Bases for your Insecticides

You can read the story of Pyrenones' unprecedented versatility as insecticide bases in the dozens of different types of formulations in which they're used today. Over 95 per cent of all aerosols, both high pressure and low, contain Pyrenones. More than 85 per cent of all oil-type dairy sprays are Pyrenone-based. And look at the rapid rise in the use of Pyrenones in food plant and warehouse sprays, in industrial insecticides.

Safe, Effective, Economical

If you have an eye for economy, the *real* cost of Pyrenones is the thing to watch for. Their high rate of knockdown and the low concentrations required for final kill often make them less costly to use than other insecticides. Their compatibility with other insecticides is another factor. Of even greater dollars-and-cents importance are the elements of safety and convenience they can bring to your finished insecticide—elements which give you a competitive edge that shows up in increased profits and steadier sales.

"Quick Facts about Pyrenones," a handy reference guide filled with condensed product and end-use data for formulators of all types of insecticides, is yours for the asking. Write today for your free copy of this valuable Pyrenone fact folder.

SPECIFICATIONS FOR THE MOST COMMONLY USED PYRENONE CONCENTRATES

PRODUCTS	Active Ingredient Content grams/100 c.c.			Active Ingredient Content % by Weight			Specific Gravity at 20°/20°C	Weight per gal. @ 20°C	Color (Gardner-Holt Stds.1933)	Approx. Flash	Min. Solubility in Petroleum Base Oil	Freon Insolubles (Max.)
	Pyrethrins	Piperonyl Butoxide (Technical)	Piperonyl Butoxide	Pyrethrins	Piperonyl Butoxide (Technical)	Piperonyl Butoxide						
Pyrenone Roach Spray Concentrate	1.2	6.0	—	1.49	7.48	—	.802 (± .005)	6.67	9.5-10.5	180-190°F	100%	—
Pyrenone K.D. Concentrate	1.2	3.0	—	1.50	3.76	—	.796 (± .005)	6.62	8.5-9.5	180-190°F	100%	—
Pyrenone Aerosol Concentrate 40-5	—	—	—	5.0	40.0	—	.903 (± .015)	7.51	12-13	180-190°F	100%	0.3%
Pyrenone Aerosol Concentrate 30-6	—	—	—	6.0	30.0	—	.883 (± .015)	7.35	12-14	188-192°F	100%	—
Pyrenone Aerosol Concentrate 20-8	—	—	—	8.0	20.0	—	.865 (± .010)	7.20	12-14	180-190°F	100%	0.4%
Pyrenone O.T. 50-5	5.0	50.0	—	5.31	53.19	—	.94 (± .025)	7.82	12-14	200-215°F	100%	—
Pyrenone R.E. 50-5	5.0	—	50.0	5.26	—	52.63	.95 (± .03)	7.65-8.15	Dark Amber	180-200°F	Cloudy to Clear	—
Pyrenone R.E. 60-3	3.0	—	60.0	3.12	—	62.50	.96 (± .03)	7.74-8.24	Dark Amber	180-200°F	Cloudy to Clear	—
Pyrenone R.E. 66-5	—	—	—	5.0	—	66.67	.982 (± .03)	8.2	Dark Amber	180-200°F	Cloudy to Clear	—
Pyrenone 220 New	0.5	4.0	—	0.62	5.03	—	.795 (± .005)	6.61	9-10	180-190°F	100%	—

Other Insecticide Products

Piperonyl Butoxide • Pyrethrum • Triple Mix Repellent—Liquid and Cream • Piperonyl Cyclonene • Rotenone • CPR-Liquid and Dust

*Reg. trade-mark of U.S.I.

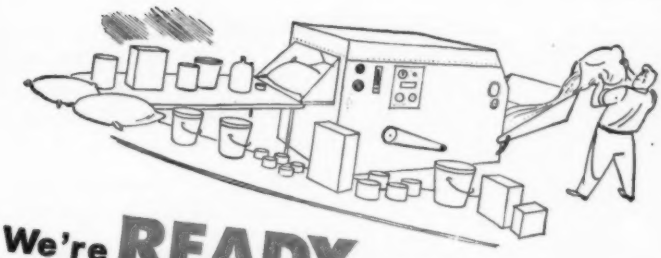
U.S.I. INDUSTRIAL CHEMICALS, INC.

60 East 42nd St., New York 17, N. Y.

Branches in all principal cities

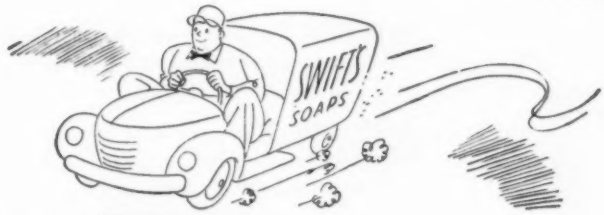
Rely on your

SWIFT'S SOAP TEAM!



We're READY with pure soap in bulk for all your needs! Swift offers a full line of basic soap materials. Whether you make hand soap, furniture cleaners, rug shampoos, washing machine soaps or any other soap product—you'll find a Swift Soap that fits *your* need. And you can't buy finer soaps for converter uses anywhere.

WILLING to continue Swift's research laboratory activities to develop better products for your purpose! Our technical division is constantly working on soap and sanitary chemical problems. This means that Swift Soap products always have the quality and effectiveness to help you get better results.



And ABLE to give service from Swift distribution points coast to coast . . . on any of Swift's fine soaps for converter uses. Remember—use good soap! Good soap promotes economy for you . . . better products for your customers.

See your local Telephone Directory for address of your nearest

Swift & Company office.

Call SWIFT first for soaps

TOXAPHENE, chlorinated camphene (67-69% Cl), is a widely-accepted toxicant for agricultural insecticides. Toxaphene insecticides are recommended by the U S D A for grasshopper control, and by leading cotton-growing states for the control of all common cotton insects.

HERCULES® CMC, sodium carboxymethylcellulose, serves as a suspending agent and emulsion stabilizer for many types of liquid insecticides. Its unique suspending properties also make it valuable as an additive to synthetic detergents and soaps where its presence helps substantially reduce dirt redeposition.

THANITE,® a toxicant, contributes instant knock-down, high kill, and long-lasting repellency to household and livestock sprays.

CASEIN, a protective colloid for many types of wax, oil, and resin emulsions.

DRESINATES,® available in dry, paste, and liquid forms, are sodium and potassium salts of various processed rosins and resins. They are used as emulsifying agents, detergent additives, dispersants, and in many other applications where uniform soaps of rosin acids may be indicated.

H chemical aids to bigger sales

for insecticides... sanitary chemicals... detergents

HERCULES® PINE OILS produce quick-acting disinfectants with long-lasting effectiveness when properly formulated and applied. Such disinfectants are safe to use, won't stain walls or floors, mix readily with soap and water, have a pleasing fragrance, and can be produced at low cost.

SOLVENOL® is a low-cost Hercules hydrocarbon, used as a powerful solvent and pleasant deodorant in many types of cleaning compounds. It serves as a highly effective ingredient in drip fluids.

TERPINEOL 318 is employed by disinfectant manufacturers for its good phenol coefficient and predominant hyacinth odor. It is a refined concentrate of alpha- and beta-terpineol.

D. H. S. ACTIVATOR® is a terpene derivative that improves the efficiency and lowers the cost of pyrethrum fly sprays. It leaves no odor, does not stain or impart taste to food.

STAYBELITE® RESIN, Hercules hydrogenated rosin, is a valuable ingredient in white soap and soap powders. Such soaps have good solubility and fast wetting action.

HERCULES® PALE WOOD ROSINS are used increasingly by soap manufacturers for their cleanliness, uniformity, and inherent brightness of color. Low in cost, they offer important manufacturing economies.

HERCULES POWDER COMPANY INCORPORATED *961 Market Street, Wilmington, Delaware*

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1951
BLUE BOOK
and Catalog Edition of
SOAP & SANITARY CHEMICALS

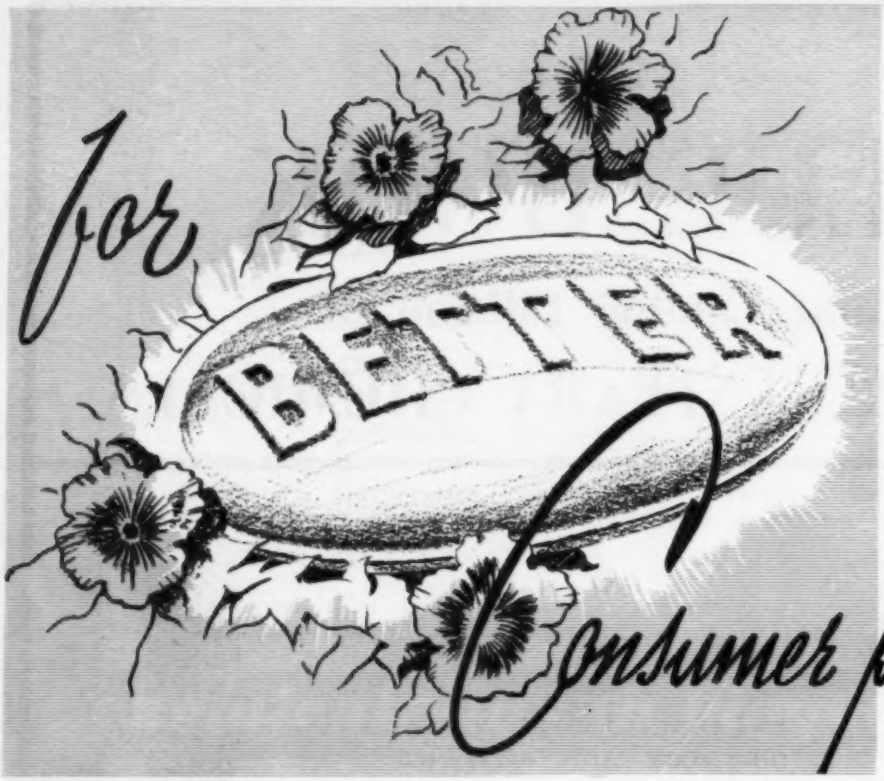
AN ANNUAL BUYERS GUIDE, DIRECTORY AND REFERENCE VOLUME FOR MANUFACTURERS, CONVERTERS AND JOBBERS OF SOAPS, DETERGENTS, INSECTICIDES, DISINFECTANTS, POLISHES, CLEANERS, CHEMICAL SPECIALTIES, JANITOR SUPPLIES AND EQUIPMENT.

Twenty-Fourth Edition

ISSUED ANNUALLY BY

MacNair-Dorland Company

254 West 31st Street New York 1, N. Y.



USE UNGERER RAW MATERIALS AND PERFUME SPECIALTIES

There's an old proverb that says, in effect, the better the brick — the better the building. It is no less true for the many products of the soap and sanitary chemicals industry. The better your basic raw materials and perfume specialties, the better your consumer products — and your sales — will be.

There's no better source for better raw materials and perfume specialties than Ungerer. Since 1893, the Ungerer name has been a symbol of quality and dependability.

As a result of many years of constructive research — both market and technical — our staff is well equipped to help you cope with the problems of today. This service is available to you for the asking.

Specialists in odors for fine hand, scouring, liquid soaps, soap cleaners and similar products.

Send for your free copy today!

Ungerer & Co.

UNGERER & CO. NEW YORK

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NEW YORK 13

Plant and Laboratories: TOTOWA, N. J.

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Foreword

THIS number of the BLUE BOOK and Catalog Edition of SOAP & SANITARY CHEMICALS represents the twenty-fourth consecutive year of publication of this standard buying guide for manufacturers, converters, repackers and distributors of bulk soaps, detergents, cleaners, insecticides, disinfectants, floor waxes and polishes, and similar products in the allied chemical specialties field, including janitor supplies, equipment and accessories. The Buyer's Guide Section has been completely revised and brought up to date to include all new products in the field. This section is designed as a reference manual to which purchasers may turn for sources of all materials used in the soap and sanitary chemical and allied industries.

Every attempt has been made to keep the listings complete and accurate. If your firm is not listed and sells raw materials, machinery, supplies, etc., to members of these industries, please let us know so we may include your name in the listings in next year's edition. It should be borne in mind, however, that the BLUE BOOK is designed for those firms selling to the trade and is not intended for use by consumers of finished products.

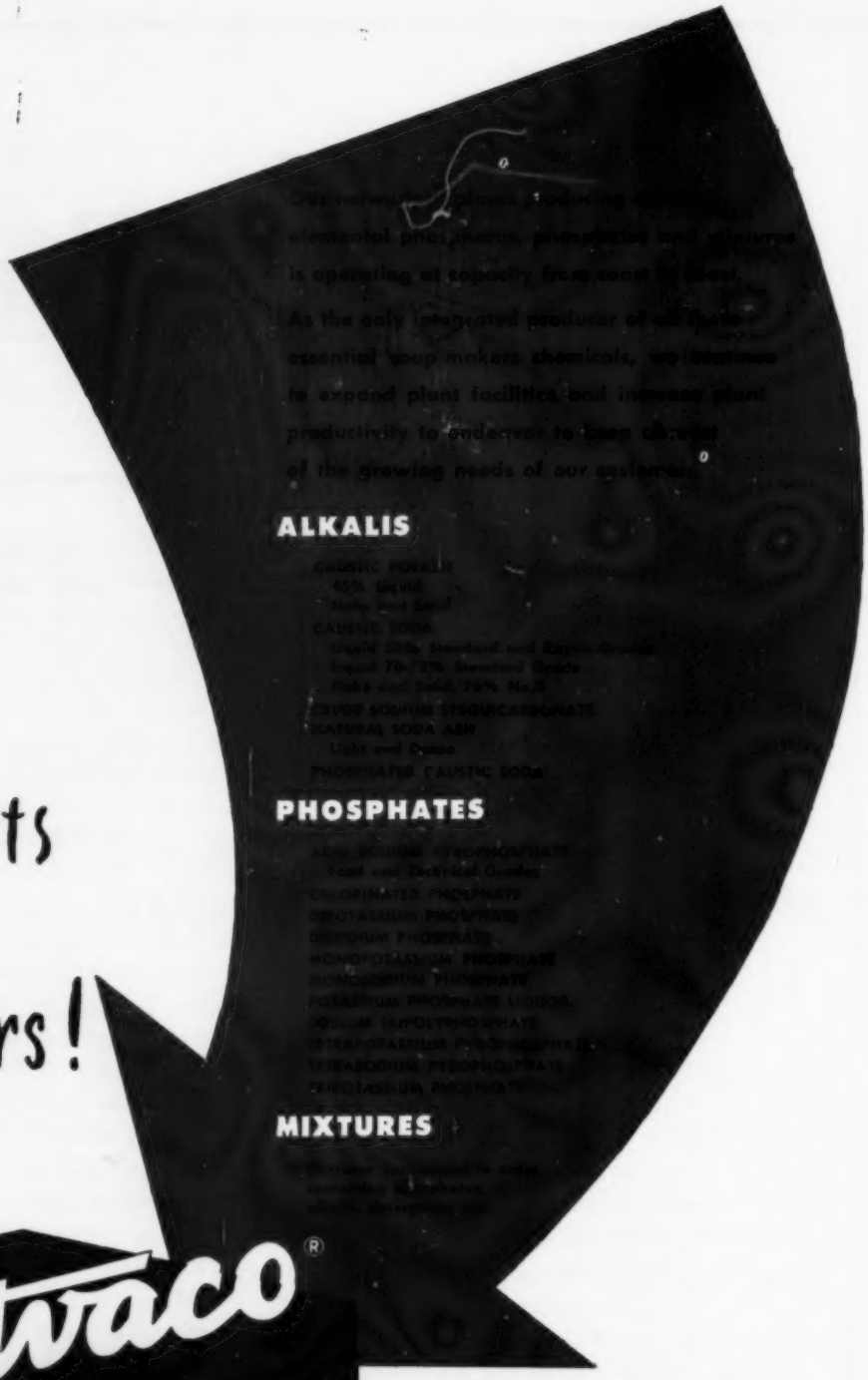
The Reference Section of the BLUE BOOK also has been revised to include the latest data on federal specifications, perfuming and trade association specifications, and other pertinent data. A water hardness chart has been added to this edition which gives, in condensed form, the hardness and pH values of water in various areas of the United States. Also given are data on trade associations serving the field and an index to articles which have appeared in monthly issues of SOAP & SANITARY CHEMICALS.

Suggestions from readers which will aid us in increasing the value of the BLUE BOOK to our subscribers are always welcome and acknowledgement is hereby made of the many valuable ideas we have received over the years.

Your old edition of the BLUE BOOK should be discarded and the 1951 edition substituted in its place.

THE PUBLISHERS

the ONLY producer of all these basic ingredients for soapmakers!



Westvaco®

TRADE MARK

WESTVACO CHEMICAL DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION
GENERAL OFFICES • 405 LEXINGTON AVENUE, NEW YORK 17
CHICAGO, ILL. • CLEVELAND, OHIO • CINCINNATI, OHIO
ST. LOUIS, MO. • LOS ANGELES, CALIF. • NEWARK, CALIF.

fmc

Buyers' Guide Section

Listed on the following pages in alphabetical order are leading sources of supply for raw materials, equipment, and containers, and also bulk and private brand finished products and accessories bought by converters, repackers, and janitor supply and sanitary supply jobbers.

●

1951 BLUE BOOK Edition
of
SOAP & SANITARY CHEMICALS

New Uses All the Time for

CROWN *SPRA-TAINER

**Crown's "Silent Salesman" For Products Old and New*

Invented by Crown, Spra-tainer was not only the *first* but is now the *leading* Propulsion Can on the market. The field is wide open! New pressure-dispensed products by the score are constantly being inspired by Spra-tainer. Established brands undergo rejuvenation when packaged this convenient way preferred by the public.

Spra-tainer, exclusively styled with "No Side Seam — No Top Seam" for safety and dependability, exemplifies Crown's creative ingenuity. Investigate Pressure Packaging for YOUR PRODUCT. And remember... Crown serves many industries with a *complete* line of cans. Whatever your business, whatever your can-needs, check first with Crown.

CROWN CAN

One of America's Largest Can Manufacturers

Plants at Philadelphia, Chicago, Orlando. Branch Offices: New York, Baltimore, Pittsburgh, St. Louis • Division of Crown Cork & Seal Company

ABRASIVES AND FILLERS (Pumice, Silica, Feldspar, Bentonite, Clays, etc.)

American Colloid Co., Merchandise Mart Plaza, Chicago
Aluminum Co. of America, Gulf Bldg., Pittsburgh, Pa.
Attapulgus Clay Co., 210 W. Washington Sq., Phila.
California Industrial Minerals Co., Friant, Calif.
Carolina Pyrophyllite Co., 10 E. 40th St., N. Y. 16
Chas. B. Chrystal Co., 53 Park Pl., N. Y.
Dicalite Div., 612 S. Flower St., Los Angeles, Cal.
Filtrol Corp., 727 W. 7th St., Los Angeles, Calif.
K. F. Griffiths Co., 110 E. 42nd St., N. Y.
Harshaw Chemical Co, 1945 E. 97th St., Cleveland 6
Heckathorn & Co., Richmond, Calif.
Innis, Speiden & Co., 117 Liberty St., N. Y. 6
Johns-Manville Corp., 22 E. 40th St., N. Y.
Monsanto Chem. Co., 1700 S. 2nd St., St. Louis
National Sawdust Co., 69 N. 6th St., Bklyn.
Natural Minerals Co., 108 W. 6th St., Los Angeles
Pacific Coast Pumice Co., Bishop, Calif.
Philadelphia Quartz Co., Public Ledger Bldg., Independence Sq., Phila. 6
Pumice Corp. of America, Grants, N. M.
Jas. H. Rhodes & Co., 157 W. Hubbard St., Chicago
Wm. R. Rogers, 72 Park St., Beverly, Mass.
L. A. Salomon & Bro., 216 Pearl St., N. Y.
F. E. Schundler & Co., Inc., 524 Railroad St., Joliet, Ill.
Southeastern Clay Co., Aiken, S. C.
Tamms Industries, Inc., 228 N. La Salle St., Chicago
United Clay Mines Corp., 101 Oakland St., Trenton, N. J.
R. T. Vanderbilt Co., 230 Park Ave., N. Y.
Chas. A. Wagner Co., 813 Callowhill St., Phila.
Whittaker Clark & Daniels, 260 W. B'way, N. Y.
Witco Chemical Co., 295 Madison Ave., N. Y.

ACIDS (Sulfuric, Muriatic, Nitric, Acetic, Etc.)

(*see also Dealers*)

American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
Atlas Powder Co., Wilmington, Del.
J. T. Baker Chemical Co., Phillipsburg, N. J.
Blockson Chem. Co., Joliet, Ill.
Carbide & Carbon Chemicals Div., 30 E. 42nd St., N. Y.
John A. Chew, Inc., 60 E. 42 St., N. Y. 17
Dow Chemical Co., Midland, Mich.
E. I. du Pont de Nemours & Co., Wilmington, Del.
General Chemical Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Hercules Powder Co., Wilmington, Del.
Heyden Chemical Corp., 393 7th Ave., N. Y. 1
Hooker Electrochemical Co., Niagara Falls, N. Y. (Muriatic)
Innis, Speiden & Co., 117 Liberty St., N. Y.
Koppers Co., Koppers Bldg., Pittsburgh, Pa.
A. R. Maas Chem. Co., 4570 Ardine St., So. Gate, Calif.
Mallinckrodt Chemical Wks., St. Louis 7
Mathieson Chem. Corp., 10 Light St., Baltimore 18
Merck & Co., Rahway, N. J.
Michigan Chem. Corp., St. Louis, Mich.
Monsanto Chemical Co., 1700 S. 2nd St., St. Louis
Niagara Alkali Co., 60 E. 42nd St., N. Y.
Oronite Chem. Co., 38 Sansome St., San Francisco
Penna. Salt Mfg. Co., 1000 Widener Bldg., Phila.
Publicker Industries, 1429 Walnut St., Phila. 2
Rohm & Haas Co., Inc., 222 W. Washington Sq., Phila.
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Rumford Chemical Wks., Rumford 16, R. I.
Stauffer Chem. Co., 420 Lexington Ave., N. Y.
Tennessee Eastman Co., Kingsport, Tenn.
Jos. Turner & Co., Ridgefield, N. J.
Victor Chemical Wks., 141 W. Jackson Blvd., Chicago
Welch, Holme & Clark Co., 439 West St., N. Y.

ACTIVATED CARBONS (see Bleaching Earths, Decolorizing Carbons)

ADHESIVES (see Glues and Adhesives)

AEROSOL CONTAINERS

Bridgeport Brass Co., Bridgeport, Conn.
Continental Can Co., 100 E. 42nd St., N. Y. 17
Crown Can Co., Erie Ave., Philadelphia 34

The Indians and Hudson Bay traders of the Northwest washed their blankets with a peculiar clay found in that region. They called it "soap clay" or "mineral jelly." There was truth in their discovery of its crude, practical efficiency! This colloidal clay is now known to be bentonite; we refine it into VOLCLAY for use in washing and cleaning compounds.

VOLCLAY is not just a "filler." It has actual detergent properties, which become very useful when combined with other ingredients.

VOLCLAY is produced in air-floated powders, some impalpably fine. Also as "KWK" —a pellet form that astonishingly disperses in water very quickly and yet yields the same colloidal gels as fine powder.

- **Emulsifies oil, greasy soil and bitumens**
- **Absorbs and suspends soil particles**
- **Absorbs certain proteins, also carbon**
- **Mild. The pH is 9 to 9.5**
- **Slightly zeolitic—absorbs calcium, gives up sodium ions**

Write us today for literature

AMERICAN COLLOID COMPANY

MERCHANDISE MART PLAZA
CHICAGO 54, ILLINOIS

THERE IS A "FREON" SAFE PROPELLENT TO MEET EVERY AEROSOL NEED

—Space spray—residual spray—foam product—Whatever the aerosol requirement, there is a "Freon" safe propellent to meet it.

"Freon" propellents are:

- **Safe**
- **Nonflammable**
- **Of extremely low order toxicity**
- **Noncorrosive**
- **Stable**
- **Good solvents for ingredients**
- **Backed up with good technical service**
- **Available in pressures for every application**

The chart below shows the wide range of pressures obtainable.

STANDARD PROPELLENTS

"FREON-12." For high-pressure aerosols such as insecticides. Also used for surface-coating products such as metallic and pigmented paints. Pressure—70 lbs./sq. in. gauge at 70°F.

"FREON-12" AND "FREON-11" SOLUTIONS. Most widely used propellent. Can be tailored to individual pressure requirements from 1 lb. to 69 lbs./sq. in. gauge at 70°F.

PROPELLENTS FOR SPECIAL APPLICATIONS

"FREON-12" AND "FREON-114" SOLUTIONS. Where the active ingredients require extreme stability . . . cosmetics, for example. Provide variety of pressures from 12 to 69 lbs./sq. in. gauge at 70°F.

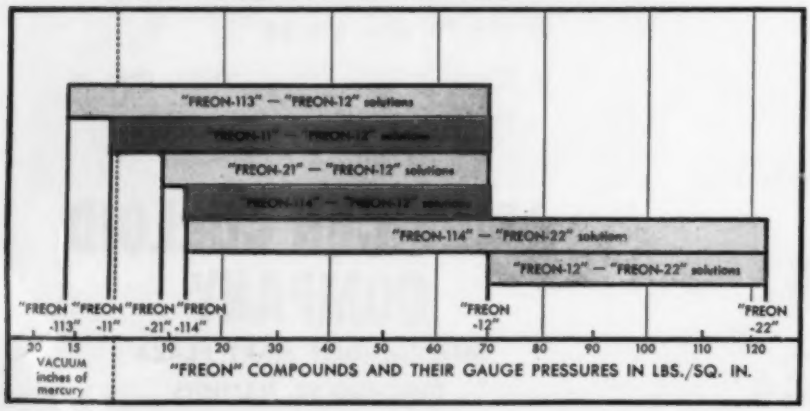
"FREON-22" IN SOLUTION WITH OTHER "FREON" PROPELLENTS. For applications requiring special solubility characteristics, as well as where pressure increasing properties are needed. The pressure of "Freon-22" at 70°F. is approximately 120 lbs./sq. in. gauge.

"FREON-21." Has unusual solubility characteristics, either when used alone or with other "Freon" propellents.

"FREON-113." For oxygen-containing products where special solvency properties are needed. Can be used either alone or with other "Freon" propellents.

For specific information relating to these "Freon" propellents or for technical assistance in the development of your proposed aerosol, or pressure-packed product, write: E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division, Wilmington 98, Delaware.

RANGE OF PRESSURES OBTAINABLE AT 70° F. WITH VARIOUS "FREON" PROPELLENT SOLUTIONS



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BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

KINETIC

FREON

SAFE PROPELLENTS

"Freon" is Du Pont's registered trade-mark for its fluorinated hydrocarbon propellents.

AEROSOL DISPERSANTS

General Chemical Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y. 6
Kinetic Chemicals Div., E. I. du Pont de Nemours & Co., Wilmington

AEROSOL FILLING (for the Trade)

G. Barr & Co., 1132 W. 37th St., Chicago 9
Bridgeport Brass Co., Bridgeport 2, Conn.
Chase Products Co., 1816 W. St. Charles Rd., Maywood, Ill.
Connecticut Chem. Research Corp., Bridgeport 5, Conn.
Continental Filling Corp., 123 N. Hazel St., Danville, Ill.
Fluid Chem. Co., 860 Summer Ave., Newark, N. J.
Industrial Management Corp., 458 S. Spring St., Los Angeles
Powr-Pak, Inc., 1148 Barnum Ave., Bridgeport, Conn.
Regal Chem. Corp., 115 Dobbin St., Bklyn. 22
Stalfort Pressure-Pak Corp., 319 W. Pratt St., Baltimore
Tru-Pine Co., 7638 Vincennes Ave., Chicago 20

AEROSOL PRODUCTS (Filled Containers for the Trade. Insecticides, Deodorants, Waxes, etc.)

G. H. Barr & Co., 1132 W. 37 St., Chicago 9
Bridgeport Brass Co., Bridgeport 2, Conn.
Chase Products Co., 1816 W. St. Charles Rd., Maywood, Ill.
Connecticut Chem. Research Corp., Bridgeport 5, Conn.
Davies-Young Soap Co., Dayton, Ohio
Edco Corp., Elkton Md.
Eston Chems. Inc., 3100 E. 26th St., Los Angeles
Fluid Chem. Co., 860 Summer Ave., Newark, N. J.
Industrial Management Corp., 458 S. Spring St., Los Angeles 13, Cal.
Puritan Distributors, Inc., Boston
Regal Chemical Corp., 115 Dobbin St., Bklyn. 22
Sparklet Devices, Inc., 272 Badger Ave., Newark 8, N. J.
Tetco Co., 458 N. Spring St., Los Angeles
Tru-Pine Co., 7638 Vincennes Ave., Chicago 20
Virginia Smelting Co., W. Norfolk, Va.
G. H. Wood & Co., Toronto, Can.
Woodlets, Inc., Portland, Pa.

AGITATORS (see Mixing Machinery)

AGRICULTURAL INSECTICIDES

Agicide Laboratories, 1717 Taylor Ave., Racine, Wis.
Aluminum Co. of America, 641 Gulf Bldg., Pittsburgh
American Agricultural Chem. Co., 50 Church St., N. Y.
American-British Chem. Supplies, 180 Madison Ave., N. Y. 16
American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
An-Fo Mfg. Co., 3129 Elmwood Ave., Oakland, Calif.
California Spray-Chemical Corp., Richmond, Calif.
Carbide & Carbon Chem., 30 E. 42nd St., N. Y.
Cenol Co., 4250 N. Pulaski Ave., Chicago
Chemical Corp. of Colorado, 1592 W. 12th Ave., Denver, Colo.
Chem. Mfg. & Dist. Co., Easton, Pa.
Chipman Chemical Co., Bound Brook, N. J.
Clarkson Co., 919 N. 9th St., Phila. 23
Commercial Solvents Corp., 17 E. 42 St., N. Y. 17
Derris, Inc., 120 Wall St., N. Y.
Dow Chemical Co., Midland, Mich.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Eston Chems., Inc., 3100 E. 26th St., Los Angeles
Filtrol Corp., 727 W. 7th St., Los Angeles
Geigy Co., 89 Barclay St., N. Y.
General Chem. Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
James Good, Inc., 2116 E. Susquehanna Ave., Phila.
Griffin Chem. Co., 1000 16th St., San Francisco
Heckathorn & Co., Richmond, Calif.
Hercules Powder Co., Wilmington, Del.
Arnold Hoffman & Co., 55 Canal St., Providence, R. I.
Hooker Electrochemical Co., Niagara Falls, N. Y.
Julius Hyman & Co., Denver, Colo.
Industrial Management Corp., 458 S. Spring St., Los Angeles
Kay-Fries Chemicals, 180 Madison Ave., N. Y. 16
Koppers Co., Koppers Bldg., Pittsburgh
Lorenz Chemical Co., 135 N. 32nd Ave., Omaha
Lanair Chem. Corp., 236 W. North Ave., Chicago 10
P. J. Lo Bue Co., 277 Park Ave., N. Y.
Mathieson Chem. Corp., 10 Light St., Baltimore 18
McLaughlin Gormley King Co., 1715—5th St., S. E., Minneapolis
Michigan Chem. Corp., St. Louis, Mich.
Miller Products Co., 1932 S. W. Water Ave., Portland, Ore.
Monsanto Chem. Co., St. Louis 4
S. B. Penick & Co., 50 Church St., N. Y.
Penna. Salt Mfg. Co., 1000 Widener Bldg., Phila.
Prentiss Drug & Chem. Co., 110 William St., N. Y.
Pittsburgh Agricultural Chem. Co., 350 Fifth Ave., N. Y. 1
John Powell & Co., 1 Park Ave., N. Y. 1
G. S. Robins & Co., 126 Chouteau Ave., St. Louis 2
Rohm & Haas Co., 222 W. Washington Sq., Phila.
Shell Chemical Corp., 500 5th Ave., N. Y. 18
Standard Oil Co. (Ind.), 910 S. Michigan Ave., Chicago
Standard Oil Co. (Calif.), 225 Bush St., San Francisco
Stauffer Chem. Co., 420 Lexington Ave., N . Y.
Thompson-Hayward Chem. Co., Kansas City, Mo.
Tobacco By-Products & Chem. Corp., Richmond, Va.
U. S. Industrial Chems., Inc., 60 E. 42nd St., N. Y.
James Varley & Sons, 1200 Switzer Ave., St. Louis
Virginia-Carolina Chemical Corp., Richmond, Va.
Westvaco Chem. Div., Food Mach. & Chem. Corp., 405 Lexington Ave., N. Y. 17
Whitmire Research Corp., 339 S. Vandeventer, St. Louis
Woburn Chemical Corp., Harrison, N. J.

AGRICULTURAL INSECTICIDE SPREADERS

Alrose Chem. Co., Box 1294, Providence, R. I.
Aluminum Ore. Co., Gulf Bldg., Pittsburgh
American-British Chem. Supplies, 180 Madison Ave., N. Y. 16
American Colloid Co., Merchandise Mart Plaza, Chicago
American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
Antara Products, Dic. of General Dyestuff Corp., 435 Hudson St., N. Y. 14
Attapulgus Clay Co., 210 W. Washington Sq., Phila.
Atlantic Refining Co., 260 South Broad St., Phila.
Atlas Powder Co., Wilmington 99, Del.
Breuer Electric Mfg. Co., 5100 N. Ravenswood Ave., Chicago 40
California Industrial Minerals Co., Friant, Calif.
Carbide & Carbon Chemicals Div., 30 E. 42nd St., N. Y.
Colloidal Products Corp., 2598 Taylor St., San Francisco
Commercial Solvents Corp., 17 E. 42 St., N. Y. 17
Crystal Soap & Chemical Co., 6300 State Rd., Phila.
Derris, Inc., 120 Wall St., N. Y.
Dicalite Div., 612 S. Flower St., Los Angeles, Calif.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Eastern Magnesia Talc Co., Burlington, Vt.
Emulsol Corp., 59 E. Madison St., Chicago
Geigy Co., 89 Barclay St., New York
General Chem. Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y. 6
Griffin Chem. Co., 1000 16th St., San Francisco
Heckathorn & Co., Richmond, Calif.
Kay-Fries Chemicals, Inc., 180 Madison Ave., N. Y.
Kearny Mfg. Co., Kearny, N. J.
Kessler Chem. Co., 7272 State Rd., Phila.
Miller Products Co., 1932 S. W. Water Ave., Portland, Ore.
Miranol Chemical Co., 16 Melville Pl., Irvington, N. J.
Monsanto Chemical Co., 1700 S. 2nd St., St. Louis
Nopco Chemical Co., Harrison, N. J.
Protean Chemical Corp., 150 Nassau St., N. Y. 1
Refined Prods. Corp., Lyndhurst, N. J.
Rohm & Haas Co., 222 W. Washington Sq., Phila.
F. E. Schundler & Co., 508 Railroad St., Joliet, Ill.
Solvay Sales Division, Allied Chemical & Dye Corp., 40 Rector St., N. Y. 6
R. T. Vanderbilt Co., 230 Park Ave., N. Y.

ALCOHOL (Ethyl and Denatured)

(see also Dealers)

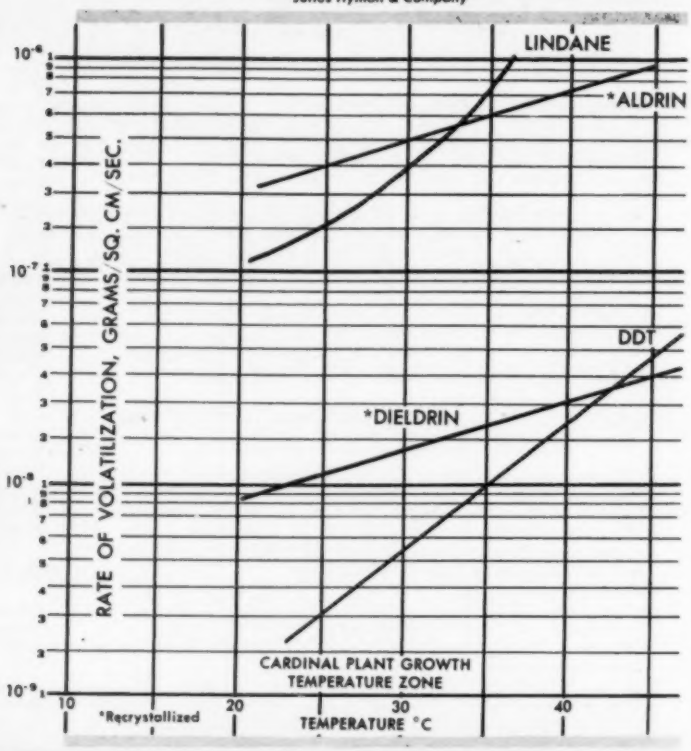
Carbide & Carbon Chemicals, 30 E. 42nd St., N. Y.
Commercial Solvents Corp., 17 E. 42nd St., N. Y. 17
E. I. du Pont de Nemours & Co., Wilmington, Del.
Industrial Chem. Sales Div., West Va. Pulp & Paper Co., 230 Park Ave., N. Y.

ALDRIN–

DIELDRIN

VOLATILIZATION RATE OF INSECT TOXICANTS

As determined by Longmuir Effusion Method in the physical-chemistry laboratories of Julius Hyman & Company



...their selective use in Insect Control

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ALDRIN and DIELDRIN are effective for the control of many of the same species of insects. Which one will be used in a given situation is usually determined by the degree of residual effectiveness desired. ALDRIN which has a relatively high vapor pressure is useful where a volatile material is needed; whereas in those situations where a more persistent effect is valuable, DIELDRIN is recommended.

The volatization rates for these insect toxicants is shown on the chart at the right. It will be noted that in the Cardinal Plant Growth Temperature Zone ALDRIN volatilizes about as rapidly as lindane while DIELDRIN volatilizes more slowly — about the rate of DDT. This disparity in evaporation rates gives the insecticide user a *choice* between a short time residual and a longer effective residual action to suit his specific needs. In adult fly and mosquito control the longest possible persistence is usually desirable. For fly control DIELDRIN at dosages of 25 or more milligrams per square foot gives 90% kill of flies for many weeks. As a mosquito larvicide, indications are that DIELDRIN at one pound of the chemical per acre gives effective control of anopheline and culicine mosquito larvae for 25 weeks in stagnant water.

Where rapid volatilization is desired as on food and forage crops, 2 ounces of ALDRIN to the acre will give up to 100% kill of grasshoppers but residues are nil 10 days after application. Thus, it is possible to use ALDRIN and DIELDRIN selectively depending upon the physical, chemical and biological basis.

Another chemical characteristic of outstanding importance to the formulator and user of ALDRIN and DIELDRIN insecticides is that both of these chemicals, in distinction to other chlorinated insecticides, are alkali stable.

ALDRIN and DIELDRIN are now registered by the USDA and most of the cotton growing states for control of boll weevil and certain other cotton insects. ALDRIN is recommended by the USDA for control of grasshoppers. It is anticipated that ALDRIN and DIELDRIN will be registered for a number of important new uses during the coming season. To keep up-to-date on these developments, ask us to add your name to our mailing list.

ALDRIN is formulated and available as emulsifiable concentrates, wettable powders and low percentage dusts. DIELDRIN is formulated into emulsifiable concentrates, oil concentrates, wettable powders and low percentage dusts.

Our entomologists and technical sales personnel will be glad to assist you in your problems. We invite correspondence. Let us send you the following literature:

Circular 400-A—Control of Cotton Insects with ALDRIN

Circular 401 —ALDRIN for Agricultural Insect Control

Circular 402 —Control of Grasshoppers with the Chemical ALDRIN

Circular 500 —DIELDRIN for Agricultural and Public Health Insect Control.

Julius **HYMAN** & Company

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Shell Chemical Corporation is national distributor of unformulated ALDRIN and DIELDRIN in the United States.

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Pennsylvania Sugar Co., 139 S. 3rd St., St. Louis
Publicker Industries, Inc., 1429 Walnut St., Phila. 2
Rosenthal Bercow Co., 25 E. 26th St., N. Y. 10
United Distillers of America, 350—5th Ave., N. Y. 1
U. S. Industrial Chemicals, Inc., 60 E. 42nd St., N. Y.

ALCOHOL (Methyl or Wood) (see also Methanol)

(see also Dealers)

J. T. Baker Chem. Co., Phillipsburg, N. J.
Carbide & Carbon Chemicals, 30 E. 42nd St., N. Y.
John H. Calo Co., 19 Rector St., N. Y. 6
Cliffs-Dow Chemical Co., Marquette, Mich.
E. W. Colledge, General Sales Agent, Inc., P. O. Box 389, Jacksonville, Fla.
Commercial Solvents Corp., 17 E. 42nd St., N. Y. 17
E. I. du Pont de Nemours & Co., Wilmington, Del.
Innis, Speiden & Co., 117 Liberty St., N. Y
Industrial Chem. Sales Div., West Va. Pulp & Paper Co., 230 Park Ave., N. Y.
Merck & Co., Rahway, N. J.
Publicker Industries, Inc., 1429 Walnut St., Phila. 2
Rosenthal Bercow Co., 25 E. 26th St., N. Y. 10
Solvay Sales Div., Allied Chemical & Dye Corp., 40 Rector St., N. Y. 6
U. S. Industrial Chemicals, Inc., 60 E. 42nd St., N. Y.
Wood Products Co., Buffalo, N. Y.

ALCOHOL, ISO-OCTYL

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ALCOHOL, ISO-PROPYL

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Rosenthal Bercow Co., 25 E. 26th St., N. Y. 10
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U. S. Industrial Chemicals, Inc., 60 E. 42nd St., N. Y.

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Dow Chem. Co., Midland, Mich.
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ALKALIES (see Caustic Soda, Soda Ash, Caustic Potash, etc.)

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Benzol Products Co., Newark, N. J.
Carbide & Carbon Chem., 30 E. 42nd St., N. Y. 17
McLaughlin, Gormley, King Co., 1715 S. E. 5th St., Minneapolis, Minn.
S. B. Penick & Co., 50 Church St., N. Y. 7
John Powell & Co., 1 Park Ave., N. Y.
Prentiss Drug & Chem. Co., 110 William St., N. Y.
U. S. Industrial Chems. Inc., 60 E. 42 St., N. Y.

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Aluminum Co. of Amer., Gulf Bldg., Pittsburgh
Belmont Smelting & Ref. Co., 318 Belmont Ave., Bklyn., N. Y.
Reynold Metals Co., 19 Rector St., N. Y.

ALUMINUM STEARATE (see Stearates)

ALUMS

(see also Dealers)

American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
Armour Ammonia Wks., 1355 W. 31st St., Chicago
John A. Chew, Inc., 60 E. 42 St., N. Y. 17
E. I. du Pont de Nemours & Co., Wilmington, Del.
General Chemical Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Harshaw Chemical Co., 1945 E. 97th St., Cleveland
Innis, Speiden & Co., 117 Liberty St., N. Y.
Mallinckrodt Chemical Wks., 22 Mallinckrodt St., St. Louis 7
Merck & Co., Rahway, N. J.
Monsanto Chem. Co., 1700 S. 2nd St., St. Louis
Penna. Salt Mfg. Co., 1000 Widener Bldg., Phila. (Ammonia)
Rohm & Haas Co., Inc., 222 W. Washington Sq., Phila.
Rosenthal Bercow Co., 25 E. 26th St., N. Y. 10
Stauffer Chem. Co., 420 Lexington Ave., N. Y.
Welch, Holme & Clark Co., 439 West St., N. Y.

AMINOHYDROXY COMPOUNDS

Carbide & Carbon Chem., 30 E. 42nd St., N. Y.
Commercial Solvents Corp., 17 E. 42nd St., N. Y.
Mallinckrodt Chemical Wks., St. Louis 7
Nopco Chem. Co., Harrison, N. J.

AMMONIA, HOUSEHOLD (see Household Ammonia)

AMMONIA WATER

(see also Dealers)

American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
Barrett Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Clarkson Co., 919 N. 9th St., Phila. 23
Dow Chemical Co., Midland, Mich.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Eastern Industries, Inc., Ridgefield, N. J.
General Chemical Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Harshaw Chemical Co., 1945 E. 97th St., Cleveland 6
Innis, Speiden & Co., 117 Liberty St., N. Y.
Mallinckrodt Chemical Wks., St. Louis
Mathieson Chemical Corp., 10 Light St., Balto. 18
Merck & Co., Rahway, N. J.
Monsanto Chem. Co., 1700 S. 2nd St., St. Louis
Penna. Salt Mfg. Co., 1000 Widener Bldg., Phila.
Rohm & Haas Co., Inc., 222 W. Washington Sq., Phila.
Rosenthal Bercow Co., 25 E. 26th St., N. Y. 10
E. B. Snyder Labs., 2137 E. Harris St., Phila. 25
Jos. Turner & Co., Ridgefield, N. J.

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American-British Chem. Supplies, Inc., 180 Madison Ave., N. Y.
American Agricultural Chem. Co., 50 Church St., N. Y.
American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
John A. Chew., 60 E. 42nd St., N. Y. 17
J. T. Baker Chem. Co., Phillipsburg, N. J.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Harshaw Chemical Co., 1945 E. 97th St., Cleveland 6
Innis, Speiden & Co., 117 Liberty St., N. Y.
Mallinckrodt Chemical Wks., 2nd & Mallinckrodt Sts., St. Louis 7
Merck & Co., Rahway, N. J.
Riches-Nelson, Inc., 342 Madison Ave., N. Y. 17
Rosenthal Bercow Co., 25 E. 26th St., N. Y. 10
Solvay Sales Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Jos. Turner & Co., Ridgefield, N. J.

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American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
J. T. Baker Chem. Co., Phillipsburg, N. J.
John H. Calo Co., 19 Rector St., N. Y. 6
E. I. du Pont de Nemours & Co., Wilmington, Del.
General Chemical Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Harshaw Chemical Co., 1945 E. 97th St., Cleveland 6
Innis, Speiden & Co., 117 Liberty St., N. Y.
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Jos. Turner & Co., Ridgefield, N. J.

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ANISE OIL (see Essential Oils)

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American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
American Fluoride Corp., 151 W. 19th St., N . Y.
An-Fo Mfg. Co., 3129 Elmwood Ave., Oakland, Calif.
Barton Chemical Co., 3907 S. Langley Ave., Chicago
Buckeye Chem. & Spec. Co., 131 E. 23 St., N. Y. 10
California Spray-Chemical Corp., Richmond, Calif.
Geo. H. Conn Co., Freeport, Ill.
Chem. Mfg. & Dist. Co., Easton, Pa.
Continental Car-Na-Var Corp., Brazil, Ind.
Foote Mineral Co., 1609 Summer St., Phila.
Fuld Bros., 702 S. Wolfe St., Baltimore
Exterminating Materials Co., 555 W. 22nd St., N. Y.
Geigy Co., Inc., 89 Barclay St., N. Y. 8
General Chem. Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y. 6
Heckathorn & Co., Richmond, Calif.
Hysan Products Co., 932 W. 38th Place, Chicago
Ketoid Chem. Co., 339 S. Van Deventer, St. Louis
O. E. Linck Co., 51 James St., Montclair, N. J.
Pfaltz & Bauer, Inc., Empire State Bldg., N. Y.
Science Industries, 605-15 Geyer Ave., St. Louis
Sennewald Drug Co., Inc., 2721 Chouteau Ave., St. Louis
Texol Chem. Wks., 75 Ward St., Wooster, Mass.
Trio Chem. Wks., 341 Scholes St., Brooklyn
York Chemical Co., 23 Dean St., Brooklyn
J. A. Tumbler Labs., 423 Hanover St., Baltimore
Uncle Sam Chem. Co., 573 W. 131st St., N. Y.
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W-B Chemical Co., Mt. Vernon, N. Y.

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E. I. du Pont de Nemours & Co., Wilmington, Del.
Fine Organics, Inc., 211 E. 19th St., N. Y. 3
Fries Bros., 92 Reade St., N. Y. 13
Griffin Chem. Co., 1000 16th St., San Francisco
Heyden Chemical Corp., 393—7 Ave., N. Y. 1
Koppers Co., Pittsburgh 19
Merck & Co., Rahway, N. J.
Monsanto Chem. Co., 1700 S. 2nd St., St. Louis
National Aniline Division, 40 Rector St., N. Y.
Sharples Chemicals, Inc., 123 S. Broad St., Phila. 9
Sindar Corp., 330 W. 42nd St., N. Y. 18
Tennessee Eastman Co., Kingsport, Tenn.
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Heckathorn & Co., Richmond, Calif.
S. B. Penick & Co., 50 Church St., N. Y. 7
Pittsburgh Agr. Chem. Co., 350 Fifth Ave., N. Y.
John Powell & Co., 1 Park Ave., N. Y.
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Franklin Research Co., 5134 Lancaster Ave., Phila. 31
Fuld Bros., 702 S. Wolfe St., Baltimore
H. Hertzberg & Son, Inc., 2300 Fifth Ave., N. Y.
Higley Chem. Co., Dubuque, Iowa
R. M. Hollingshead Corp., Camden, N. J.
H. D. Hudson Mfg. Co., 589 E. Illinois St., Chicago
Hysan Products Co., 932 W. 38th Place, Chicago
S. C. Johnson & Son, 1155 Howe St., Racine, Wisc.
Laitner Brush Co., 2000 Brooklyn Ave., Detroit
Lowell Mfg. Co., 589 E. Illinois St., Chicago
Midland Laboratories, 210 Jones St., Dubuque, Iowa
E. B. Moore & Co., 613 N. Parkside Ave., Chicago
Palmer Fixture Co., Box 347, Waukesha, Wisc.
Pioneer Mfg. Co., 3053 E. 87th St., Cleveland
Rex-Cleanwell Corp., Brazil, Ind.
Shane & Hays, Inc., 5300—21st Ave., Brooklyn, N. Y.
H. F. Staples Co. Medford, Mass.
Uncle Sam Chem. Co., 573 W. 131st St., N. Y.
U. S. Sanitary Specialties, 1001 S. California Ave., Chicago

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Aroscent, Inc., Main & Chestnut Sts., Dobbs Ferry, N. Y.
Berje Products Co., 616 W. 44th St., N. Y. 18
Centflor Mfg. Co., 243 W. 67th St., N. Y.
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Compagnie Parento, Inc., Croton-on-Hudson, N. Y.
Dodge & Olcott, Inc., 180 Varick St., N. Y.
Dow Chemical Co., Bush Aromatics Div., 629 Grove St., Jersey City 2
P. R. Dreyer, Inc., 117½ W. 19th St., N. Y.
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Fairmount Chem. Co., 600 Ferry St., Newark, N. J.
Felton Chemical Co., 603 Johnson Ave., Brooklyn
Firmenich & Co., 250 W. 18th St., N. Y.
Fleuroma, Inc., 73 Sullivan St., N. Y. 12
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Benj. French, Inc., 160 Fifth Ave., N. Y.
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Givaudan-Delawanna, Inc., 330 W. 42nd St., N. Y.
Gunning & Gunning, 601 W. 26th St., N. Y.
Heyden Chemical Corp., 393 Seventh Ave., N. Y.
D. W. Hutchinson & Co., 162 Front St., N. Y.
C. E. Ising Corp., Flushing, L. I., N. Y
Kay-Fries Chemicals, Inc, 180 Madison Ave., N. Y.
Samuel Klein, 4 Hanover Sq., N. Y. 4
E. M. Laning Co., 433 Stuyvesant Ave., Irvington, N. J.
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Pierre Lemoine, Inc., 67 Cortland St., N. Y.
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Monsanto Chemical Co., 1700 S. 2nd St., St. Louis
Naugatuck Aromatics, 254 Fourth Ave., N. Y.
Neumann-Buslee & Wolfe, 224 W. Huron St., Chicago
N. Y. Aromatics Co., 5 Beekman St., N. Y.
Norda Essential Oil & Chem. Co., 601 W. 26th St., N. Y.
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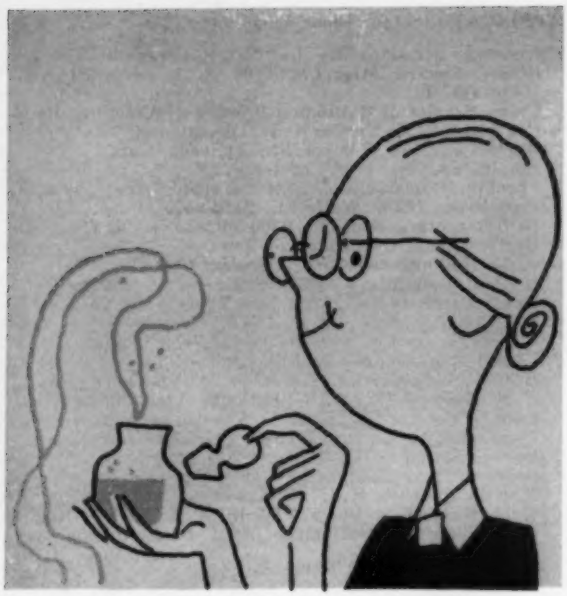
Polak's Frutal Wks., Inc., 33 Sprague Ave., Middletown, N. Y.
Polak & Schwarz, Inc., 667 Washington St., N. Y.
F. Ritter & Co., 4001 Goodwin Ave., Los Angeles 39
Roubechez, Inc., 8 E. 12th St., N. Y. 3
Roure-Dupont 366 Madison Ave., N. Y.



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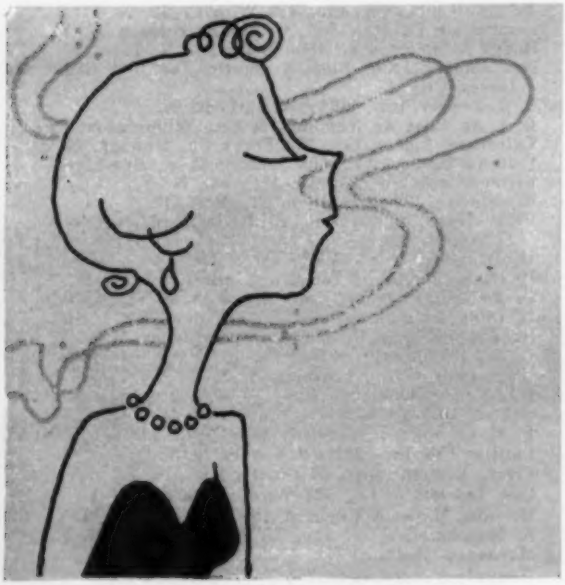

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Synfleur Scientific Labs., Monticello, N. Y.
Syntomatic Corp., 114 E. 32nd St., N. Y.
A. M. Todd Co., Kalamazoo, Mich.
Tombarel Products Corp., 12 E. 22nd St., N. Y.
Ungerer & Co., 161 Sixth Ave., N. Y.
van Ameringen-Haebler, Inc., 521 W. 57 St., N. Y. 19
Van Dyk & Co., Belleville, N. J.
Albert Verley, Inc., 440 W. Superior St., Chicago
Verona Chemical Co., 26 Verona Ave., Newark, N. J.

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American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
American Smelting & Refining Co., 120 Broadway, N. Y.
J. T. Baker Chem. Co., Phillipsburg, N. J.
E. I. du Pont de Nemours & Co., Wilmington, Del.
General Chemical Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Charles Hardy, Inc., 420 Lexington Ave., N. Y.
Harshaw Chemical Co., 1945 E. 97th St., Cleveland 6
Heckathorn & Co., Richmond, Calif.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Merck & Co., Rahway, N. J.
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Sergeant Chem. Co., 7 Dey St., N. Y.

ARSENICAL DIPS

Analab Laboratories, 285 Franklin St., Boston 10
Baird & McGuire, Inc., Holbrook, Mass.
California Spray-Chemical Corp., Richmond, Calif.
Chipman Chemical Co., Bound Brook, N. J.
Wm. Cooper & Nephews, 1909 Clifton Ave., Chicago
Crystal Soap & Chemical Co., 6300 State Rd., Phila.
Fuld Bros., 702 S. Wolfe St., Baltimore 31, Md.
General Chemical Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
James Good Co., Susquehanna Ave. and Martha Ave., Phila.
Hysan Prods., 932 W. 38th Place, Chicago
Kemiko Mfg. Co., 500 Chancellor Ave., Irvington, N. J.
Koppers Co., Koppers Bldg., Pittsburgh
McLaughlin Gormley King Co., Minneapolis
Thompson-Hayward Chemical Co., 2915 Southwest Blvd., Kansas City, Mo.
U. S. Sanitary Spec. Corp., 1001 S. California Blvd., Chicago 12
James Varley & Sons, 1200 Switzer Ave., St. Louis

ATOMIZERS (see Sprayers Bottle)

AUTO SOAPS (see Potash Soaps)

BAGS (Cloth)

Bemis Bro. Bag Co., 601 S. 4th St., St. Louis
Central Bag & Burlap Co., 4513 S. Western Blvd., Chicago
Chase Bag Co., 309 W. Jackson Blvd., Chicago
Dayton Bag & Burlap Co., Dayton, Ohio
Filter Paper Co., 2464 S. Michigan Ave., Chicago
Fulton Bag & Cotton Mills, Atlanta, Ga.
Hammond Bag & Paper Co., Wellsburg, W. Va.
Mente & Co., New Orleans, La.
Paper Service Co., Lockland, Cincinnati
Virginia-Carolina Chem. Corp., Richmond, Va.

BAGS AND LINERS (Paper)

Arkell Safety Bag Co., 10 E. 40th St., N. Y.
Arkell & Smiths, Canajoharie, N. Y.
Bagpak Div., Int'l Paper Co., 220 E. 42nd St., N. Y.
Bemis Bro. Bag Co., 601 S. 4th St., St. Louis
Canister Co., Phillipsburg, N. J.
Chase Bag Co., 309 W. Jackson Blvd., Chicago 6
Crepe-Kraft Co., 114 Adams St., Newark, N. J.
Fulton Bag & Cotton Mills, Atlanta, Ga.

ESSENTIAL OILS SYNTHETIC AROMATICS
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Galbanum	Peru	Tolu
	Styrax	Vanilla

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Bois de Rose	Lavender Spike	Rosemary
Cananga	Oak Moss	Sandalwood
Geranium	Origanum	Vetivert
	Patchouli	Ylang Ylang

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BAGS AND LINERS (Paper) (Contd.)

Hammond Bag & Paper Co., Wellsburg, W. Va.
Kraft Bag Corp., 630—5th Ave., N. Y. 20
Nashua Gummed & Coated Paper Co., Nashua, N. H.
Paper Service Co., Box 107, Lockland, Cincinnati
St. Regis Paper Co., 230 Park Ave., N. Y.
Union Bag & Paper Co., 233 Broadway, N. Y.
Virginia-Carolina Chem. Corp., 401 E. Main St., Richmond, Va.

BAGS (Multiwall)

Arkell & Smiths, Canajoharie, N. Y.
Bagpak Div., Int'l Paper Co., 220 E. 42nd St., N. Y.
Bemis Bro Bag Co., 601 S. 4th St., St. Louis
Chase Bag Co., 155 E. 44th St., N. Y.
Fulton Bag & Cotton Mills, Atlanta
Hammond Bag & Paper Co., Wellsburgh, W. Va.
Kraft Bag Corp., 630—5th Ave., N. Y. 20
Paper Service Co., P. O. Box 107, Lockland, Cincinnati
St. Regis Paper Co., 230 Park Ave., N. Y.
Union Bag & Paper Corp., 233 Broadway, N. Y.

BALSAMS

Aromatic Products, Inc., 15 E. 30th St., N. Y.
Berje Prods. Co., 616 W. 44th St., N. Y. 18
Centflor Mfg. Co., 243 W. 67th St., N. Y.
Antoine Chiris Co. Inc., 119 W. 57th St., N. Y.
Compagnie Parento, Inc., Croton-on-Hudson, N. Y.
Dodge & Olcott, Inc., 180 Varick St., N. Y.
P. R. Dreyer Inc., 117½ W. 19th St., N. Y.
Felton Chemical Co., 603 Johnson Ave., Brooklyn
Florasynth Laboratories, 1513 Olmstead Ave., Bronx, N. Y.
Fritzsche Brothers, Inc., 76 Ninth Ave., N. Y.
Givaudan-Delawanna, Inc., 330 W. 42nd St., N. Y.
Gunning & Gunning Inc., 601 W. 26th St., N. Y. 1
D. W. Hutchinson & Co., 162 Front St., N. Y.
Geo. Lueders & Co., 427 Washington St., N. Y.
Lautier Fils, Inc., 321 Fifth Ave., N. Y. 16
Magnus, Mabee & Reynard, 16 Desbrosses St., N. Y.
Norda Essential Oil & Chem. Co. 601 W. 26th St., N. Y.
Orbis Products Corp., 215 Pearl St., N. Y.
S. B. Penick & Co., 50 Church St., N. Y.
F. Ritter & Co., 4643 Hollywood Blvd., Los Angeles 27
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Frank B. Ross Co., 507 Eight St., Hoboken, N. J.
Roubechez, Inc., 8 E. 12th St., N. Y.
H. C. Ryland, Inc., 161 Water St., N. Y.
W. H. Scheel Inc., 38 Franklin St., Brooklyn
Schimmel & Co., 601 W. 26th St., N. Y.
Synfleur Scientific Labs., Inc., Monticello, N. Y.
Tombarel Products Corp., 12 E. 22nd St., N. Y.
Ungerer & Co., 161 Sixth Ave., N. Y.
van Ameringen-Haebler, Inc., 521 W. 57 St., N. Y. 19
Albert Verley, Inc., 440 W. Superior St., Chicago

BARIUM CARBONATE

Alton Barium Prods. Co., Alton, Ill.
American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
J. T. Baker Chem. Co., Phillipsburg, N. J.
Croton Chem. Corp., 114 Liberty St., N. Y.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Fezandie & Sperrle, 205 Fulton St., N. Y.
Foote Mineral Co., 1609 Summer St., Philadelphia
Harshaw Chemical Co., 1945 E. 97th St., Cleveland
Innis, Speiden & Co., 117 Liberty St., N. Y.
Mallinckrodt Chem. Wks., St. Louis 7
Merck & Co., Rahway, N. J.
Rosenthal Bercow Co., 25 E. 26th St., N. Y. 10
Westvaco Chem. Div., Food Machinery & Chem. Corp., 405 Lexington Ave., N. Y.
Whittaker, Clark & Daniels, 260 West Broadway, N. Y.
Witco Chemical Co., 295 Madison Ave., N. Y.
York Chem. Co., 23 Dean St., Brooklyn

BARREL LINERS (see Bags and Liners)

BARRELS (Fibre)

Canister Co., Phillipsburg, N. J.
Carpenter Container Co., 147 — 41st St., Brooklyn
Champion Container Co., Water & Morris Sts., Phila.
Columbia Can Co., 315 Wyckoff Ave., Brooklyn
Container Co., Van Wert, O.
Continental Can Co., 100 E. 42 St., N. Y. 17
Diamond State Fibre Co., Bridgeport, Pa.
Federal Fiber Corp., 3704 10th St., L. I. C. 1
Master Package Corp., Owen, Wisc.
Rogers Fibre Co., 210 Lincoln St., Boston
Seymour & Peck Co. (Plywood), 565 W. Washington St., Chicago
Spaulding Fibre Co., Rochester, N. H.

BARRELS (Metal)

American Cooperage Co., Mauer, N. J.
American Steel Package Co., Defiance, O.
Columbia Can Co., 315 Wyckoff Ave., Brooklyn
Continental Can Co., 100 E. 42 St., N. Y. 17
Draper Mfg. Co., Cleveland
Eastern Can Co., Keap St. & Kent Ave., Bklyn.
Fetter Steel Barrel Corp., Buffalo
Globe Steel Barrel Co., Cleveland
Inland Steel-Container Co., 6532 S. Menard St., Chicago
J & L Steel Barrel Co., Pittsburgh
Manion Steel Barrel Co., Rouseville, Pa.
National Steel Barrel Co., 3860 E. 91st St., Cleveland
Petroleum Iron Works Co., Sharon, Pa.
Pittsburgh Can Co., Pittsburgh
Pressed Steel Tank Co., Milwaukee, Wis.
Republic Steel Package Co., 7930 Jones Rd., Cleveland
Rheem Mfg. Co., 570 Lexington Ave., N. Y.
St. Louis Steel Package Co., St. Louis
John Trageser Steam Copper Works, Grand Ave., Maspeth, L. I., N. Y.
U. S. Steel Prods. Co., 30 Rockefeller Plaza, N. Y.
Vulcan Stamping & Mfg. Co., Bellwood, Ill.
Wheeling Corrugating Co., Wheeling, W. Va.

BARRELS (Wood)

American Cooperage Co., Barber, N. J.
Bauer Cooperage Works, G. F., 1415 W. 31st St., Phila.
Boston Cooperage Co., South Boston, Mass.
Brooklyn Cooperage Co., 120 Wall St., New York
Burkhartsmeier Cooperage Co., 7240-54 S. Chicago Ave., Chicago
Chess & Wymond, Inc., Louisville
Eizner Company, John, 1050 W. Kinzie St., Chicago
Fessenden Companies, Inc., Townsend, Mass.
General Cooperage Co., Phila.
Johnson Co., Inc., T., 1046 W. 38th St., Chicago
Kimball-Tyler Co., Gough and Haven Sts., Baltimore
Kingsland Cooperage Co., Newark, N. J.
Klausner Cooperage Co., 5207 Grant Ave., Cleveland
Louisville Cooperage Co., Louisville
Milwaukee Cooperage Co., 3030 W. Auer Ave., Milwaukee
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago
Oker Sons Co., Cincinnati
Pioneer Cooperage Co., St. Louis
Pioneer Cooperage Co., Chicago
St. Louis Cooperage Co., 101 Arsenal St., St. Louis
Siemon & Sons, 1750 N. Front St., Phila.
Steinmetz & Sons, 4638 Mitchell St., Detroit
Stolper Cooperage Co., 3232 W. Fondulac, Milwaukee
Verdi Brothers Cooperage Co., North Bergen, N. J.
T. & W. Wehmier, Latonia, Ky.

BARREL TILTERS

Economy Eng. Co., 2651 W. Van Buren St., Chicago

BASE OILS (see Petroleum Insecticide Base Oils)

BATH SALTS

A-M-R Chemical Co., 985 E. 35th St., Brooklyn 18
Davies-Young Soap Co., Dayton 1, Ohio
Eagle Soap Corp., Huntington, Ind.
Higley Chem. Co., Dubuque, Iowa
Hysan Prods. Co., 932 W. 38th Place, Chicago
Imperial Prods. Co., 1600 Fontain St., Phila.
Jansen Soap & Chemical Co., 324 Leavenworth St., San Francisco, Calif.
Lightfoot-Schultz Co., 1412 Park Ave., Hoboken, N. J.

BATH SALTS (Contd.)

M. & H. Laboratories, 2705 Archer Ave., Chicago
Port Huron Detergent Co., Port Huron, Mich.
Schmidt Soap Products, 236 W. North Ave., Chicago
Schratz, Inc., 534 W. Congress, Detroit
Skotch Prods. Corp., 2710 Detroit Ave., Cleveland
E. B. Snyder Labs., 2137 E. Harold St., Philadelphia
Solvay Sales Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y. (Unperfumed)
Trio Chem. Wks., 341 Scholes St., Brooklyn
Welch, Holme & Clark Co., 439 West St., N. Y.
Allen B. Wrisley Co., 6801 W. 65th St., Chicago

BAY RUM

P. R. Dreyer, Inc., 117½ W. 19th St., N. Y.
Chas. L. Huisking & Co., 155 Varick St., N. Y.
Lanman & Kemp-Barclay Co., 135 Water St., N. Y.
McKesson & Robbins, 155 E. 44th St., N. Y.
S. B. Penick & Co., 50 Church St., N. Y.
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Tombarel Products Corp., 12 E. 22nd St., N. Y.
Ungerer & Co., 161 Sixth Ave., N. Y.

BENTONITE

American Colloid Co., Merchandise Mart Plaza, Chicago
American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
Attapulgus Clay Co., 210 W. Washington Sq., Phila.
Chas. B. Chrystal Co., 53 Park Pl., N. Y.
Filtrol Corp., 727 W. 7th St., Los Angeles
Harshaw Chemical Co., 1945 E. 97th St., Cleveland 6
Heckathorn & Co., Richmond, Calif.
Imperial Prods Co., 1600 Fontain St., Phila. 21
Innis, Speiden & Co., 117 Liberty St., N. Y.
Natura Minerals Co., 108 W. 6th St., Los Angeles
Owyhee Chemical Products Co., 300 W. Adams St., Chicago
Rosenthal Bercow Co., 25 E. 26th St., N. Y. 10
L. A. Salomon & Bro., 216 Pearl St., N. Y.
F. E. Schundler & Co., Joliet, Ill.
Silica Products Co., 700 Baltimore Ave., Kansas City, Mo.
Tamms Industries, Inc., 228 N. La. Salle St., Chicago
United Clay Mines Corp., 101 Oakland St., Trenton, N. J.
Virginia-Carolina Chem. Corp., Richmond, Va.
Chas. A. Wagner Co., 813 Callowhill St., Phila.
Welch Holme & Clark Co., 439 West St., N. Y.
Whittaker, Clark & Daniels, 260 W. Broadway, N. Y.
Witco Chemical Co., 295 Madison Ave., N. Y.
Wyodak Chemical Co., 4600 E. 71st St., Cleveland

BENZALDEHYDE

Aromatic Products, Inc., 15 E. 30th St., N. Y.
Berje Products Co., 616 W. 44th St., N. Y. 18
Centflor Mfg. Co., 450 W. 31st St., N. Y. 1
Compagnie Parento, Inc., Croton-on-Hudson, N. Y.
Dodge & Olcott Inc., 180 Varick St., N. Y.
Dow Chemical Co., Midland, Mich.
P. R. Dreyer, Inc., 117½ W. 19th St., N. Y.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Felton Chemical Co., 603 Johnson Ave., Brooklyn
Florasynth Laboratories, 1513 Olmstead Ave., Bronx, N. Y.
Fritzsche Brothers, Inc., 76 Ninth Ave., N. Y.
Givaudan-Delawanna, Inc., 330 W. 42nd St., N. Y.
Heyden Chem. Co., 393 Seventh Ave., N. Y. 1
Lautier Fils, 321 Fifth Ave., N. Y. 16
Magnus, Mabee & Reynard, 16 Desbrosses St., N. Y.
Merck & Co., Rahway, N. J.
Orbis Products Corp., 215 Pearl St., N. Y.
Polak's Frutal Wks., 33 Sprague Ave., Middletown, N. Y.
F. Ritter & Co., 4641 Hollywood Blvd., Los Angeles 27
Schimmel & Co., 601 W. 26th St., N. Y.
Tombarel Products Corp., 12 E. 22nd St., N. Y.
Ungerer & Co., 161 Sixth Ave., N. Y.
van Ameringen-Haebler, Inc., 521 W. 57 St., N. Y. 19
Van Dyk & Co., Belleville, N. J.
Albert Verley, Inc., 440 W. Superior St., Chicago

BENZENE (Benzol)

Barrett Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
S. H. Bell Co., 1407 Gulf Bldg., Chicago
John H. Calo Co., 19 Rector St., N. Y. 6
Wm. Cooper & Nephews, 1909 Clifton Ave., Chicago
Hydrocarbon Products, 500 Fifth Ave., N. Y.
Koppers Co., Koppers Bldg., Pittsburgh, Pa.
Neville Co., Pittsburgh
Rosenthal Bercow Co., 25 E. 26th St., N. Y. 10
Tar Residuals, Inc., 420 Lexington Ave., N. Y.

BENZENE HEXACHLORIDE (see also Lindane)

Commercial Solvents Corp., 17 E. 42nd St., N. Y.
Dow Chemical Co., Midland, Mich.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Eston Chemicals, Inc., 3100 E. 26th St., Los Angeles
Ethyl Corp., 405 Lexington Ave., N. Y. 17
Geigy Co., Inc., 89 Barclay St., N. Y. 8
General Chemical Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Heckathorn & Co., Richmond, Calif.
Hooker Electrochemical Co., 4701 Buffalo Ave., Niagara Falls, N. Y.
Kolker Chem. Works, 80 Lister St., Newark, N. J.
Mathieson Chemical Corp., 10 Light St., Baltimore
Michigan Chemical Corp., St. Louis, Mich.
Monsanto Chemical Co., 1700 S. 2nd St., St. Louis
Pennsylvania Salt Mfg. Co., 1000 Widener Bldg., Phila.
Pittsburgh Agr. Chem. Co., 350 Fifth Ave., N. Y.
John Powell & Co., 1 Park Ave., N. Y. 16
Rosenthal Bercow Co., 25 E. 26th St., N. Y. 10
Stauffer Chemical Co, 420 Lexington Ave., N. Y.
Westvaco Chem. Div., Food Mach. & Chem. Corp., 405 Lexington Ave., N. Y.

BERGAMOT OIL (see Essential Oils)

BICHROMATES

American-British Chem. Supplies, Inc., 180 Madison Ave., N. Y.
American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
John A. Chew, 60 E. 42nd St., N. Y. 17
Diamond Alkali Co., 300 Union Commerce Bldg., Cleveland 14
E. I. du Pont de Nemours & Co., Wilmington, Del.
Harshaw Chemical Co., 1945 E. 97th St., Cleveland 6
Innis, Speiden & Co., 117 Liberty St., N. Y. 6
Mallinckrodt Chem. Wks., St. Louis 7
Merck & Co., Rahway, N. J.
Mutual Chem. Co. of America, 270 Madison Ave., N. Y.
Natural Prods. Refining Co., Jersey City, N. J.
Prior Chem. Corp., 420 Lexington Ave., N. Y.
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Sergeant Chemical Co., 7 Dey St., N. Y.
Jos. Turner & Co., Ridgefield, N. J.

BLEACHING AGENTS (Chemical Bleaches for Oils, Fats, Soaps, etc.)

American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
Buffalo Electro Chem. Co., Buffalo, N. Y.
Diamond Alkali Co., Union Commerce Bldg., Cleveland 14
E. I. du Pont de Nemours & Co., Wilmington, Del.
Heyden Chemical Corp., 393 7th Ave., N. Y. 1
Hooker Electrochemical Co., Niagara Falls, N. Y.
Industrial Chem. Sales Div., West Va. Pulp & Paper Co., 230 Park Ave., N. Y.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Lucidol Corp., 293 Larkin St., Buffalo
Mallinckrodt Chem. Co., St. Louis 7
Mathieson Chemical Corp., 10 Light St., Balto. 18
Monsanto Chem. Co., St. Louis 4
Niagara Alkali Co., 60 E. 42nd St., N. Y.
Penna. Salt Mfg. Co., 1000 Widener Bldg., Phila.
Pittsburgh Plate Glass Co., Columbia Chemical Div., Grant Bldg., Pittsburgh
Rohm & Haas Co., 222 W. Washington Sq., Phila.
Solvay Sales Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Stauffer Chem. Co., 420 Lexington Ave., N. Y.
Jos. Turner & Co., Ridgefield, N. J.
Westvaco Chem. Div., Food Machinery & Chem. Corp., Chrysler Bldg., N. Y.
Wyandotte Chemicals Corp., Michigan Alkali Div., Wyandotte, Mich.

BLEACHING EARTHS and CARBONS (see also Clays)

American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
Attapulgus Clay Co., 210 W. Washington Sq., Phila.
Chas. B. Chrystal Co., 53 Park Pl., N. Y.
Dicalite Co., 612 S. Flower St., Los Angeles, Calif.
Filter Paper Co., 2426 S. Michigan Ave., Chicago 16
Filtrol Corp., 727 W. 7th St., Los Angeles
J. M. Huber Corp., 100 Park Ave., N. Y. 17
Illinois Silica Co., Cairo, Ill.
Industrial Chem. Sales Div., West Va. Pulp & Paper Co., 230 Park Ave., N. Y.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Peerless Clay & Mineral Co., Pueblo, Colo.
L. A. Salomon & Bro., 216 Pearl St., N. Y.
Sinclair Refining Co., East Chicago, Ind.
Tamms Industries, Inc., 228 N. LaSalle St., Chicago
Chas. A. Wagner Co., 813 Callowhill St., Phila.
Westvaco Chem. Div., Food Machinery & Chem. Corp., 405 Lexington Ave., N. Y. 17
Whittaker, Clark & Daniels, 260 W. Broadway, N. Y.
Witco Chemical Co., 295 Madison Ave., N. Y.
Wyodak Chem. Co., 4600 E. 71st St., Cleveland

BLEACHING EQUIPMENT (for Oils), (see Deodorizing Equipment)

BLEACHING POWDER (Chloride of Lime)

American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
Diversey Corp., 53 W. Jackson Blvd., Chicago

BLEACHING POWDER (Chloride of Lime) (Contd.)

E. I. du Pont de Nemours & Co., Wilmington, Del.
Harshaw Chemical Co., 1945 E. 97th St., Cleveland 6
Innis, Speiden & Co., 117 Liberty St., N. Y.
Mathieson Chemical Corp., 10 Light St., Baltimore
Monsanto Chemical Co., St. Louis 4
Niagara Alkali Co., 60 E. 42nd St., N. Y.
Penna. Salt Mfg. Co., 1000 Widener Bldg., Phila.
Rosenthal Bercow Co., 25 E. 26th St., N. Y. 10
Sergeant Chem. Co., 7 Dey St., N. Y.
Stauffer Chem. Co., 420 Lexington Ave., N. Y.
Jos. Turner & Co., Ridgefield, N. J.
Welch, Holme & Clark Co., 439 West St., N. Y.

BLOCK HOLDERS (see Holders, Deodorizing Block)

BLOWERS, ELECTRIC (see Sprayers, Electric)

BLUING (see Laundry Blue)

BOILER COMPOUNDS

American Colloid Co., Merchandise Mart Plaza, Chicago
Ampion Corp., 47-02 5th St., Long Island City, N. Y.
Analab Labs., 285 Franklin St., Boston 10
Baum's Castorine Co., Rome, N. Y.
Brilco Laboratories, 1553 63rd St., Brooklyn 19
Carbide & Carbon Chem., 30 E. 42nd St., N. Y.
Chem. Service Co. of Baltimore, Baltimore 30
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Churchill Mfg. Co., Galesburg, Ill.
Eagle Soap Corp., Huntington, Ind.
Essential Chems. Co., 744 N. 4 St., Milwaukee 3
Fuld Bros., 702 S. Wolfe St., Baltimore
Goulard & Olena, Inc., Skillman, N. J.
Haag Laboratories, Blue Island, Ill.
Hawk-Eye Compound Co., Blue Island, Ill.
Hercules Chem. Co., 332 Canal St., N. Y.
Higley Chem. Co., Dubuque, Iowa
R. M. Hollingshead Corp., Camden, N. J.
Hysan Prods. Co., 932 W. 38th Place, Chicago
Kemiko Mfg. Co., 500 Chancellor Ave., Irvington, N. J.
Midland Labs., Dubuque, Iowa
Peck's Products Co., 610 E. Clarence Ave., St. Louis 15
Permutit Co., 330 W. 42nd St., N. Y.
Theo. B. Robertson Prods. Co., 700 Division St., Chicago
Shield-All Co., 99-18 43rd St., Corona, N. Y.
Solshine Mfg. Co., 423 Second St., Fall River, Mass.
Trio Chem. Wks., 341 Scholes St., Brooklyn
Ultra Chem. Wks., P. O. Box 1536, Paterson, N. J.
U. S. Sanitary Specialties Corp., 1001 S. California Blvd., Chicago 12
Welch, Holme & Clark Co., 439 West St., N. Y.
Wyandotte Chemicals Corp., Michigan Alkali Div., Wyandotte, Mich.

BOIS de ROSE OIL (see Essential Oils)

BORAX (and Boric Acid)

American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
American Potash & Chem. Corp., 122 E. 42nd St., N. Y. 17
John A. Chew, Inc., 60 E. 42 St., N. Y. 17
Croton Chem. Corp., 114 Liberty St., N. Y.
E. I. du Pont de Nemours & Co., Wilmington, Del.
General Chemical Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Harshaw Chemical Co., 1945 E. 97th St., Cleveland
Innis, Speiden & Co., 117 Liberty St., N. Y.
Mallinckrodt Chem. Wks., St. Louis 7
Pacific Coast Borax Co., 100 Park Ave., N. Y.
Pittsburgh Plate Glass Co., Columbia Chem. Div., Pittsburgh
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Sergeant Chem. Co., 7 Dey St., N. Y.
Stauffer Chem. Co., 420 Lexington Ave., N. Y.
Jos. Turner & Co., Ridgefield, N. J.
Welch, Holme & Clark Co., 439 West St., N. Y.
Witco Chemical Co., 295 Madison Ave., N. J.

BORIC ACID (see Above)

BOX LINERS (see Bag Liners)

BOXES (Corrugated and/or Fibre)

Brooklyn Fibre Syndicate, Decatur St. & Irving Ave., Brooklyn
Cambridge Paper Box Co., 196 Broadway, Cambridge, Mass.
Consolidated Paper Co., Monroe, Mich.
Container Corp. of America, 111 W. Washington St., Chicago
Federal Fibre Corp., 3704 10th St., L. I. C. 1
Robert Gair Co., 155 E. 44th St., N. Y.
Gardner Board & Carton Co., Middletown, O.
Hinde & Dauch Paper Co., 222 Decatur St., Sandusky, O.
F. J. Kress Box Co., 2390 Liberty Ave., Pittsburgh
Universal Folding Box Co., Monroe & 13th Sts., Hoboken, N. J.

BOXES (Fancy Paper)

Alderman-Fairchild Co., 367 Orchard St., Rochester, N. Y.
F. N. Burt Co., Ltd., 540 Seneca St., Buffalo, N. Y.
C. J. Fox Co., 236 Abron St., Providence, R. I.
Foxon Paper Co., 230 West Park St., Providence, R. I.
Robert Gair Co. 155 E. 44th St., N. Y.
Gardner Board & Carton Co., Middletown, O.
R. R. Heywood, Inc., 26th St. & 9th Ave., N. Y.
R. J. Kittredge Co., 812 W. Superior St, Chicago
Pictorial Package Co., Aurora, Ill.
Piqua Paper Box Co., Piqua, O.
Potomac Lithograph Mfg. Co., Washington, D. C.
W. C. Ritchie & Co., 8800 S. Baltimore Ave., Chicago
Robert Paper Box Co., Montville, Conn.
Geo. Schmitt & Co., Grand & Florence Sts., Brooklyn
Strobridge Lithographing Co., Norwood Station, Cincinnati
U. S. Printing & Lithographing Co., Norwood, Cincinnati N. J.
Universal Folding Box Co., Monroe & 13th St., Hoboken,
Carl Voss Corp., Hoboken, N. J.

BOXES (Fancy Wooden)

American Crayon Co., Sandusky, O.
National Box & Lumber Co., Newark 5, N. J.
Pilliod Cabinet Co., Swanton, O.

BOTTLES AND JARS

Armstrong Cork Co., Lancaster, Pa.
Anchor Hocking Glass Corp., Lancaster, Ohio
Capstan Glass Co., Connelsville, Pa.

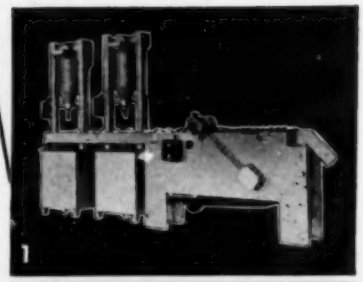
THE S&S LINE

FOR BETTER PACKAGING

Whether your product goes to the consumer in bottles or cans, odd shapes, boxes or bags, there's an S & S packaging machine with speeds to suit your needs.

Our Engineering staff is always available to help in the solution of your packaging and filling problems.

Write for further information.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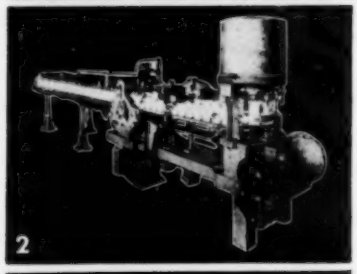
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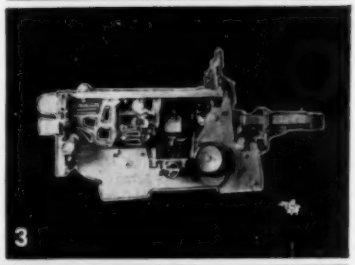
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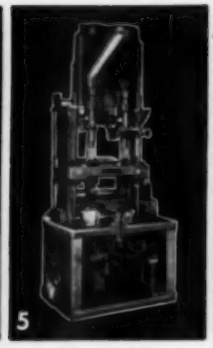
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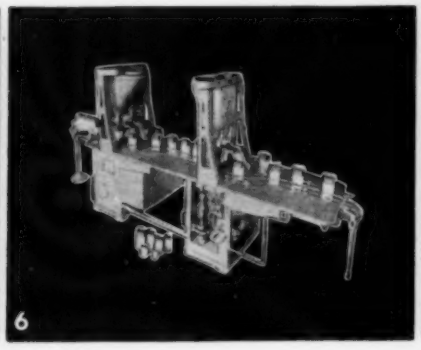
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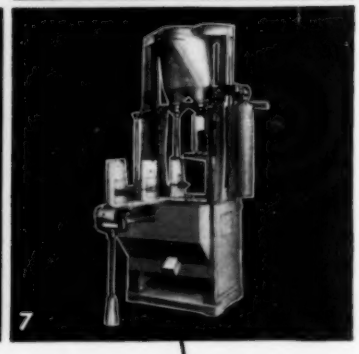
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1. Bag & Envelope Sealer
2. Neverstop Carton Filler & Sealer
3. Automatic Tight Wrapper
4. Universal Filler
5. Stokeswrap Packaging Machine
6. Automatic Double Unit Filler
7. Duplex Packer & Weigher

Exclusive West Coast Distributor:
Anderson-Barngrover Division of FMC
San Jose 5, California

fmc

STOKES & SMITH Co

PACKAGING MACHINERY **PAPER BOX MACHINERY**

Subsidiary of Food Machinery and Chemical Corporation

4915 Summerdale Ave., Philadelphia 24, U. S. A.

BOTTLES AND JARS (Contd.)

Carr-Lowrey Glass Co., P. O. Box 356, Baltimore 3
Foster-Forbes Glass Co., Marion, Ind.
Graham Glass Co., Evansville, Ind.
Hagerty Bros. & Co., 10 Platt St., N. Y.
Hazel Atlas Glass Co., Wheeling, W. Va.
Kimble Glass Co., Vineland, N. J.
Maryland Glass Corp., Baltimore, Md.
Millville Bottling Wks., Millville, N. J.
Owens Illinois Glass Co., Toledo, O.
F. E. Reed Glass Co., 860 Maple St., Rochester, N. Y.
Root Glass Co., Terre Haute, Ind.
Ruth Glass Co., Conshohocken, Pa.
Tygart Valley Glass Co., Washington, Pa.
T. C. Wheaton Co., Millville, N. J.

BOTTLES, PLASTIC (Rigid and Squeezeable)

Calumet Mfg. Co., 565 - 5th Ave., N. Y. 17
Elmer E. Mills Corp., 2930 N. Ashland Ave., Chicago 13
Plax Corp., P. O. Box 1019, Hartford 1, Conn.

BOTTLE FILLING MACHINERY (see Filling Machinery Bottles)

BOTTLE HANDLING EQUIPMENT (Unpacking, Cleaning, Drying, etc.)

Chisholm-Ryder Co. of Pa., Hanover, Pa.
Filter Paper Co., 2426 S. Michigan Ave., Chicago 16
Karl Kiefer Machine Co., 919 Martin St., Cincinnati
Perl Mach. Mfg. Co., 68 Jay St., Bklyn.
Pneumatic Scale Corp., N. Quincy, Mass.
Stokes & Smith Co., 4915 Summerdale Ave., Phila.
U. S. Bottlers Mchy. Co., 4019 N. Rockwell St., Chicago

BOTTLE WASHERS (see Washing Machinery, Bottle)

BROKERS (Chemicals)

American-British Chemical Supplies, 180 Madison Ave., N. Y. 16
S. H. Bell Co., 1407 Gulf Bldg., Pittsburgh
John H. Calo Co., 19 Rector St., N. Y. 6
John A. Chew, Inc., 60 E. 42nd St., N. Y.
Simon Cytron Trading Co., 50 Broad St., N. Y.
Dickerson Co., Drexel Bldg., Phila.
Elgo Trading Corp., 220 Broadway, N. Y. 7
Griffin Chem. Co., 1000 16th St., San Francisco
Otto A. C. Hagen Co., Public Ledger Bldg., Phila.
Heckathorn & Co., Richmond, Calif.
Arnold Hoffman Co., Providence, R. I.
Chas. L. Huisking & Co., 155 Varick St., N. Y.
P. J. Lo Bue Co., 277 Park Ave., N. Y.
Leo Pasternak, Inc., 110 William St., N. Y.
G. S. Robins & Co., 126 Chouteau Ave., St. Louis 2
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
George Uhe, Inc., 80 Eighth Ave., N. Y.
Welch, Holme & Clark Co., 439 West St., N. Y. 14
G. A. Wharry & Co., 95 Broad St., N. Y. 4

BROKERS (Oils and Fats)

American-British Chemical Supplies, 180 Madison Ave., N. Y. 16
Irving R. Boody Co., 120 Wall St., N. Y.
John H. Calo Co., 19 Rector St., N. Y. 6
Simon Cytron Trading Co., 50 Broad St., N. Y.
Davidson Commission Co., 327 S. La Salle St., Chicago
John W. Hall, 327 S. La Salle St., Chicago
Otto A. C. Hagen Co., Public Ledger Bldg., Phila.
Hasselman, Seaman, de Ryss, Inc., 347 Madison Ave., N. Y.
Hentz & Co., 60 Beaver St., N. Y.
Arnold Hoffman Co., Providence, R. I.
Chas. Hollingshead Co., Produce Exchange, N. Y.
Horner Commission Co., 15 William St., N. Y.
E. G. James Co., 316 S. La Salle St., Chicago
Kullman & Co., 339 Produce Exchange, N. Y.
Marwood Co., 221 N. LaSalle, Chicago
Miller & Co., 2401 Chestnut St., Philadelphia
Rayner & Stonington, Inc., 79 Wall St., N. Y.
Roesling, Monroe & Co., 133 Front St., N. Y.
Rosenthal Bercow Co. 25 E. 26th St., N. Y.
Sterne & Son Co., Board of Trade Bldg., Chicago
Weaver & Hugi, Inc., Produce Exchange Bldg., N. Y.
Welch, Holme & Clark Co., Inc., 439 West St. N. Y. 14
G. A. Wharry & Co., 95 Broad St., N. Y.
Wilbur-Ellis Co., 17 Battery Pl., N. Y.
Wilson Brokerage, Inc., Produce Exchange, N. Y.

BROOMS

Alabama Broom & Mattress Co., Huntsville, Ala.
Amsterdam Broom Co., 81-95 Brookside Ave., Amsterdam, N. Y.
Detroit Quality Brush Mfg. Co., 5937 Michigan Ave., Detroit
Eagle Woodenware Co., Hamilton, O.
Flour City Brush Co., 301 Fifth Ave., Minneapolis
Illinois Brush Mfg. Co., 3316 Ogden Ave., Chicago
Kendallville Brush & Broom Co., Kendallville, Ind.
Laitner Brush Co., 2000 Brooklyn Ave., Detroit
Ox Fibre Brush Co., Frederick, Md.
Tate Mfg. Co., 67 Sudbury St., Boston, Mass.
M. J. Toohey & Co., Fall River, Mass.

BRUSHES

American Standard Mfg. Co., 2509 S. Green St., Chicago
Amsterdam Broom Co., 81-95 Brookside Ave., Amsterdam, N. Y.
Detroit Quality Brush Mfg. Co., 5937 Michigan Ave., Detroit
Empire Brushes, Inc., Port Chester, N. Y.
Jos. O. Flatt & Co., 141 Cedar St., Reading, Pa.
Flour City Brush Co., 301 Fifth Ave., So., Minneapolis
J. I. Holcomb Co., Indianapolis
Illinois Duster & Brush Co., 1944 Webster Ave., Chicago
W. E. Kautenberg Co., P. O. Box 255, Freeport, Ill.
Kendallville Brush & Broom Co., Kendallville, Ind.
Laitner Brush Co., 2000 Brooklyn Ave., Detroit
National Brush Co., Aurora, Ill.
Ox Fibre Brush Co., Frederick, Md.
Pacific Coast Brush Co., Los Angeles
Pioneer Mfg. Co., Cleveland, O.
Silver-Chamberlin Co., Clayton, N. J.
Sullivan Brush Co., Terre Haute, Ind.
Tate Mfg. Co., 67 Sudbury St., Boston, Mass.

BULK SOAPS (see Chip Soap, Laundry Soap)

CAJUPUT OIL (see Essential Oils)

CALCIUM HYPOCHLORITE

Clarkson Co., 919 W. 9th St., Phila. 23
Cowles Chemical Co., 7016 Euclid Ave., Cleveland 3
Harshaw Chemical Co., 1945 E. 97th St., Cleveland 6
Innis, Speiden & Co., 117 Liberty St., N. Y.
John Wiley Jones Co., Caledonia, N. Y.
Mathieson Chemical Corp., 10 Light St., Balto. 18
Niagara Alkali Co., 60 E. 42nd St., N. Y.
Penn. Salt Mfg. Co., Widener Bldg., Phila.
Pittsburgh Plate Glass Co., Columbia Chemical Div., Pittsburgh
Jos. Turner & Co., Ridgefield, N. J.
Rosenthal Bercow, 25 E. 26th St., N. Y. 10
U. S. Industrial Chems., Inc., 60 E. 42nd St., N. Y.
Universal Chlorinator Co., 3418 W. Pico Blvd., Los Angeles
Wyandotte Chemicals Corp., Michigan Alkali Div., Wyandotte, Mich.

CALCIUM STEARATE (see Stearates)

CAMPHOR OIL (see Essential Oils)

CAN FILLING MACHINERY (see Filling Machinery, Cans)

CANDELILLA WAX (see Waxes)

CAN SPOUTS AND NOZZLES

Continental Can Co., 100 E. 42 St., N. Y. 17
Crown Cork & Seal Co., Baltimore, Md.

...a Pair of Aces for Low Pressure Aerosols

A For a "container-and-valve," all in one, put your chips on Continental's exclusive "Fingertip" dispenser. It's the *only* container with a built-in valve, and it's tops for low-pressure dispensing of fine spray products, like insecticides, household deodorants and similar preparations.

A For container alone, Continental's dome top pressure can is a sure winner. It's streamlined, has a quality appearance, is versatile — ideal for packaging a wide range of products, from insecticides to paint.

When dealing with low-pressure aerosols, this pair of Continental products is hard to beat. Continental is not only the largest manufacturer of low-pressure aerosol cans for non-food products, but also the only supplier of both container and valve — and container alone. And here's an ace in the hole: both cans can be fully lithographed in bright, attractive colors.

CONTINENTAL CAN COMPANY

CONTINENTAL CAN BUILDING
100 East 42nd Street, New York 17, N. Y.

Eastern Division: 122 E. 42nd St., New York 17
Central Division: 135 So. La Salle St., Chicago 3
Pacific Division: Russ Building, San Francisco 4

CAN SPOUTS AND NOZZLES (Contd.)

Eastern Can Co., Keap St. & Kent Ave., Bklyn.
George D. Ellis & Son, 309 N. 3rd St., Philadelphia
Seal Spout Corp., 363 Jelliff Ave., Newark 8, N. J. (for cartons)
Standard Containers, Inc., Montclair, N. J.
Z & W Machine Prods., Inc., 5151 St. Clair Ave., Cleveland

CANS (Fibre or Paper)

American Can Co., 230 Park Ave., N. Y.
Cambridge Box Co., 196 Broadway, Cambridge, Mass.
Canister Co., Phillipsburg, N. J.
Cin-Made Corp. 294 Eggleston Ave., Cincinnati
Cleveland Container Co., 6201 Barberton Ave., Cleveland
Columbia Can Co., 315 Wyckoff Ave., Brooklyn
Continental Can Co., 100 E. 42nd St., N. Y.
Cross Paper Products Co., 2595 Third Ave., N. Y.
Federal Fibre Corp., 3704 10th St., L. I. C. 1
Fonda Container Co., 41 Park Row, N. Y.
Harcord Mfg. Co., 150 Bay St., Jersey City 2, N. J.
Master Package Corp., Owen, Wis.
Middlesex Paper Tube Co., 342 Madison Ave., N. Y.
Midwest Paper Container Co., 707 N. 3rd St., Minneapolis
Murro Chemical Co., P. O. Box 185, Asheville, N. C.
National Paper Can Co., Cudahy, Wis.
Packard Container Corp., West New York, N. J.
R. C. Can Co., 121 Chambers St., St. Louis
W. C. Ritchie & Co., 8800 S. Baltimore Ave., Chicago
Sealright Co., 500 Fifth Ave., N. Y.
Sutherland Paper Co., Kalamazoo, Mich.

CANS (Sifter Top)

American Can Co., 230 Park Ave., N. Y.
Anchor Hocking Glass Corp., Lancaster, Ohio
Cambridge Paper Box Co., 196 Broadway, Cambridge, Mass.
Canister Co., Phillipsburg, N. J.
Cans, Inc., 3217 W. 47th Pl., Chicago
Cleveland Container Co., 6201 Barberton Ave., Cleveland
Cin-Made Corp., 294 Eggleston Ave., Cincinnati
Continental Can Co., Inc., 100 E. 42nd St., N. Y.
Crown Can Co., Erie Ave. & H St., Phila.
Eastern Can Co., Keap St. & Kent Ave., Bklyn.
Harcord Mfg. Co., 150 Bay St., Jersey City 2, N. J.
Middlesex Paper Tube Co., 342 Madison Ave., N. Y.
Murro Chemical Co., P. O. Box 185, Asheville, N. C.
National Can Co., 110 E. 42nd St., N. Y.
Packard Container Corp., 5811 Park Ave., West New York, N. J.
R. C. Can Co., 121 Chambers St., St. Louis
W. C. Ritchie & Co., 8800 S. Baltimore Ave., Chicago
Sefton Fibre Can Co., 3275 Big Bend Blvd., St. Louis
Standard Container, Inc., Bloomfield, N. J.
Sutherland Paper Co., Kalamazoo, Mich.

CANS (Tin)

American Can Co., 230 Park Ave., N. Y.
Anchor Hocking Glass Corp., Lancaster, Ohio
Central Can Co., 2415 W. 9th St., Chicago
Cans, Inc., 3217 W. 47th Pl., Chicago
J. L. Clark Mfg. Co., Rockford, Ill.
Columbia Can Co., 315 Wyckoff Ave., Brooklyn
Continental Can Co., Inc., 100 E. 42nd St., N. Y.
Crown Can Co., Erie Ave. & H St., Philadelphia
Eastern Can Co., Wythe Ave. & Keap St., Brooklyn 11
George D. Ellis & Sons, 309 N. 3rd St., Philadelphia
Fein's Tin Can Co., Bush Terminal, Brooklyn
General Can Co., 1603 S. Canal St., Chicago
Heekin Can Co., Cincinnati
National Can Co., 110 E. 42nd St., N. Y.
W. F. Robertson Steel & Iron Co., Springfield, O.
St. Louis Can Co., 904 S. 14th St., St. Louis
Standard Container, Inc., Bloomfield, N. J.
Vulcan Tin Can Co., Bellwood, Ill.

CAPPING MACHINERY

Alsop Engineering Corp., 100 High St., Milldale, Conn.
Anchor Hocking Glass Corp., Lancaster, Ohio
Consolidated Packaging Machinery Corp., 1400 West Ave., Buffalo
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
Crown Cork & Seal Co., Baltimore, Md.
Filter Paper Co., 2464 S. Michigan Ave., Chicago
First Machy. Corp., 157 Hudson St., N. Y. (Used)
Hornney & Co., 420 Lexington Ave., N. Y.
Karl Kiefer Machine Co., 919 Martin St., Cincinnati, Ohio
M. R. M. Co., 191 Berry St., Brooklyn
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago
Pneumatic Scale Corp., North Quincy, Mass.
Scientific Filter Co., 2 Franklin Sq., N. Y. 10
Triangle Package Machy. Co., 6633 W. Diversey Blvd., Chicago 51
Tite-Cap Machine Co., 2 Franklin Sq., N. Y. 7
U. S. Bottlers Mchy. Co., 4015 N. Rockwell St., Chicago

CAPPING MATERIALS

Anchor Hocking Glass Corp., Lancaster, Ohio
Aridor Co., 3428 W. 48th Place, Chicago
Crown Cork & Seal Co., Baltimore
Filter Paper Co., 2426 S. Michigan Ave., Chicago 16
Satisfaction Supply Co., 508 W. Broadway, N. Y. 12
Sylvania Industrial Corp., Chanin Bldg., N. Y.

CAPS (Molded)

Anchor Hocking Glass Corp., Lancaster, Ohio
Armstrong Cork Co., Lancaster, Pa.
General Plastics, Inc., N. Tonawanda, N. Y.
Owens-Illinois Glass Co., Toledo, Ohio
Plaskon Division, Libby-Owens-Ford Glass Co., 2112 Sylvan Ave., Toledo 6, Ohio
Resinox Corp., Terre Haute, Ind.
Standard Cap & Molding Co., 307 S. Eaton St., Baltimore
Toledo Synthetic Prods. Co., Toledo, Ohio

CAPS (Metal)

Aluminum Co. of America, Gulf Bldg., Pittsburgh
Anchor Hocking Glass Corp., Lancaster, Ohio
Aridor Co., 3428 W. 48th Place, Chicago
Armstrong Cork Co., Lancaster, Pa.
Cans, Inc., 3217 W. 47th Pl., Chicago
Cin-Made Corp., 295 Eggleston Ave., Cincinnati
Closure Service Co., Toledo, Ohio
Continental Can Co., 100 E. 42nd St., N. Y.
Crown Cork & Seal Co., Eastern Ave. & Kresson St., Baltimore
George D. Ellis Sons, 309 N. 3rd St., Philadelphia
National Can Co., 110 E. 42nd St., N. Y.
National Seal Co., 14th Ave. & 37th St., Brooklyn
Owens-Illinois Glass Co., Toledo, Ohio
Phoenix Metal Cap Co., 2444 W. 16th St., Chicago
Satisfaction Supply Co., 508 W. Broadway, N. Y. 12

CARBOLIC ACID (see Phenol)

CARBONS for bleaching oils, glycerine, etc. (see Decolorizing Carbons)

CARBON TETRACHLORIDE

(see also Dealers)

J. T. Baker Chemical Co., Phillipsburg, N. J.
Carbide & Carbon Chemicals, 30 E. 42 St., N. Y. 17
John A. Chew, Inc., 60 E. 42 St., N. Y. 17
Diamond Alkali Corp., 300 Union Commerce Bldg., Cleveland 14
Dow Chemical Co., Midland, Mich.
E. I. Du Pont de Nemours & Co., Wilmington, Del.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Niagara Smelting Corp., Niagara Falls, N. Y.
Pennsylvania Salt Mfg. Co., 1000 Widener Bldg., Phila.
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Stauffer Chem. Co., 420 Lexington Ave., N. Y.
Virginia-Carolina Chem. Corp., Richmond, Va.
Welch, Holme & Clark Co., 439 West St., N. Y.
Westvaco Chem. Div., Food Mach. & Chem. Corp., 405 Lexington Ave., N. Y.

CARBOXY METHYCELLULOSE (CMC)

Antara Products, Div. of General Dyestuff Corp., 435 Hudson St., N. Y. 14

Columbia Chemicals

for SOAP MAKING SPECIAL MIXTURES REPACKING

Caustic Soda

Liquid	50% and 73% NaOH
Solid	76% Na_2O
Flake	76% Na_2O, Fine and Medium
Ground and Powered	76% Na_2O

Columbia Caustic Soda is especially desirable for the manufacture of soap because of its freedom from impurities and metallic contamination. Liquid grades are shipped in special tank cars which first made practical the shipment of 73% Caustic Liquor in its purest form. Insulation effectively prevents crystallization and the patented lining prevents metallic contamination in transit.

Other grades test 98-100% Sodium Hydroxide (NaOH), equivalent to 76% Na_2O. Flake Caustic Soda is prepared in two grades of fine and medium sized flakes, free of dust. The finer grade is especially suitable for repacking for household use, as are the Ground and Powdered grades.

Soda Ash—Light and Dense

The original Columbia chemical. Over a half-century's experience in the manufacture of this essential chemical for soap makers has enabled the development of techniques and controls that assure uniform density and regularity of physical form and purity.

Pacific Crystals

Pacific Crystals are a true sodium sesquicarbonate—unmodified by mechanical mixing—of a tabular, crystalline structure and fine particle size. They are non-irritating, free-flowing, non-caking. They mix readily with dry materials and dissolve quickly in water.

The gentle, safe action of Pacific Crystals has made it widely accepted by repackers and compounders for many uses such as soap extenders, water softeners, laundry-textile-dairy-tanner's sodas, dishwashing compounds, silk degummers, general cleaning compounds. Pacific Crystals can be used directly in the crutcher in the manufacture of soap builders. Packed in 100 lb. paper bags.

Ortho-Dichlorobenzene

Columbia Ortho-Dichlorobenzene is a clear, colorless to slightly yellow liquid. Supplied in tank cars (8,000 gallons) and in drums (55 gallons).

Para-Dichlorobenzene

Columbia Para-Dichlorobenzene sublimes readily leaving no residue, is soluble in most organic solvents but is insoluble in water. Available in seven mesh sizes to meet the needs of the soap industry in the manufacture of sanitary specialties and deodorants. Shipped in fiber drums, 200, 100, 50 and 25 lbs. net.

Special Cleansers

COLUMBIA CLEANER AND CLEANSER is a specially prepared product for general use in all hand cleaning operations. A white powder containing no harmful inactive ingredients, it dissolves rapidly and completely in water. COLUMBIA PHOSFLAKE is a uniform blend of Caustic Soda and Tri Sodium Phosphate, prepared in convenient flake form. Especially adapted to machine bottle washing—quick acting, easy to handle (minimizes dust particles that irritate the skin and throat of the operator), superior in sterilizing and rinsing properties.

Modified Sodas

Mixtures of Sodium Carbonate and Sodium Bicarbonate. Especially useful in cleansing operations requiring a mild alkaline detergent-aid. Manufactured in three grades—No. 100, No. 200 and No. 300—with different degrees of alkalinity.

COLUMBIA TECHNICAL SERVICE

Columbia's Technical Service is available for developing the most advantageous uses of these or other Columbia products in your processes. Pittsburgh Plate Glass Company, Columbia Chemical Division, Fifth at Bellefield, Pittsburgh 13, Pa.

COLUMBIA CHEMICALS

CHICAGO BOSTON NEW YORK ST. LOUIS PITTSBURGH CLEVELAND
CINCINNATI MINNEAPOLIS PHILADELPHIA CHARLOTTE

PAINT · GLASS · CHEMICALS · BRUSHES · PLASTICS

PITTSBURGH PLATE GLASS COMPANY

CARBOXY METHYL CELLULOSE (Contd.)

Dow Chemical Co., Midland, Mich.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Hercules Powder Co., 929 King St., Wilmington, Del.
Wyandotte Chemicals Corp., Michigan Alkali Div., Wylandotte, Mich.

CARNAUBA WAX (see WAXES)

CARTON HANDLING SYSTEMS

J. L. Ferguson Co., Joliet, Ill.
Hornney & Co., 420 Lexington Ave., N. Y.
Pneumatic Scale Corp., Quincy, Mass.
Self-Lifting Piano Truck Co., Findlay, Ohio
Stephans-Adamson Mfg. Co., Aurora, Ill.
Weigh Right Automatic Scale Co., Joliet, Ill.

CARTON LINING MACHINES (see Lining Machinery)

CARTON SEALING MACHINERY (see Sealing Machinery)

CARTONING MACHINERY

Allied Steel & Equipment Co., Chester, N. J.
Chisholm-Ryder Co. of Pa., Hanover, Pa.
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
J. L. Ferguson Co., Joliet, Ill.
First Machy. Corp., 157 Hudson St., N. Y. (Used)
Hornney & Co., 420 Lexington Ave., N. Y.
Johnson Automatic Sealer Co., Battle Creek, Mich.
R. A. Jones & Co., Cincinnati, Ohio
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago
Pneumatic Scale Corp., North Quincy, Mass.
F. B. Redington Co., 112 S. Sangamon St., Chicago
Stokes & Smith Co., 4915 Summerdale Ave., Phila.
Triangle Package Machinery Co., 6633 W. Diversey Blvd., Chicago 51
Weigh Right Automatic Scale Co., Joliet, Ill.

CARTONS (Display and Knock Down)

Alderman-Fairchild Co., Rochester, N. Y.
Consolidated Paper Co., Monroe, Mich.
Robert Gair Co., 155 E. 44th St., N. Y.
Gardner Board & Carton Co., Middletown, Ohio
Nevins-Church Co., 250 Park Ave., N. Y.
New England Card & Paper Co., Springfield, Mass.
Owens-Illinois Glass Co., Toledo, O.
Pictorial Package Co., Aurora, Ill.
Randolph Box & Label Co., 843 W. VanBuren St., Chicago
W. C. Ritchie & Co., 8800 S. Baltimore Ave., Chicago
Robertson Paper Box Co., Inc., Montville, Conn.
George Schmitt & Co., Grand & Florence Sts., Brooklyn
Sutherland Paper Co., Kalamazoo, Mich.
U. S. Printing & Lithographing Co., Cincinnati, Ohio
Universal Folding Box Co., Monroe & 13th St., Hoboken, N. J.

CASE LOADING MACHINERY

Chisholm-Ryder Co., Hanover, Penna.
J. L. Ferguson Co., Joliet, Ill.
Johnson Automatic Scale Co., Battle Creek, Mich.
R. A. Jones & Co., Cincinnati
Hornney & Co., 420 Lexington Ave., N. Y.
Karl Kiefer Mach. Co., 919 Martin St., Cincinnati
Pneumatic Scale Corp., N. Quincy, Mass.
Stokes & Smith Co., 4915 Summerdale Ave., Phila.

CASE SEALING MACHINERY (see Sealing Machinery)

CASEIN

American-British Chem. Supplies, Inc., 180 Madison Ave., N. Y.
American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
Borden Co., 350 Madison Ave., N. Y.
Wm. Diehl & Co., 336 W. 42nd St., N. Y. 18
E. I. du Pont de Nemours & Co., Wilmington, Del.
Enco Chem. Corp., 441 Lexington Ave., N. Y.
Hercules Powder Co., 929 King St., Wilmington, Del.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Land-o-Lakes Creameries, Minneapolis
National Casein Co., 603 W. 80th St., Chicago
Sergeant Pulp & Chem. Co., 7 Dey St., N. Y.
Welch, Holme & Clark Co., 439 West St., N. Y.

CASES (Fibre) (see Boxes, Cans)

CASES (Corrugated) (see Boxes)

CASSIA OIL (see Essential Oils)

CASTILE SOAP, BAR

Armour Soap Wks., 1355 W. 31st St., Chicago
Conti Products Corp., 43 Clinton Ave., Brooklyn
Davies-Young Soap Co., Dayton 1, O.
Haskins Bros. & Co., Omaha
Hewitt Soap Co., Dayton, O.
Hockwald Chem. Co., 135 Mississippi St., San Francisco
Kranich Soap Co., 54 Richards St., Brooklyn
Lockwood-Brackett Co., Waltham Station, Boston
Los Angeles Soap Co., Los Angeles, Calif.
Newell Gutradt Co., 350 Fremont St., San Francisco
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Procter & Gamble Co., Ivorydale, O.
Sanitary Soap Co., 104 Railroad Ave., Paterson
Schmidt Soap Products, 236 W. North Ave., Chicago
Solshine Mfg. Co., 412 2nd St., Fall River, Mass.
John T. Stanley Co., 642 W. 30th St., N. Y.
Superior Soap Corp., 121 Nostrand Ave., Brooklyn
Swift & Co., Chicago
Allen B. Wrisley Co., 6801 W. 65th St., Chicago

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Ampion Corp., 47-02 5th St., Long Island City, N. Y.
Analab Labs., 285 Franklin St., Boston 10
Antiseptol Co., 5524 Northwest Highway, Chicago
Armour & Co., 1355 W. 31st St., Chicago 9
Baums Castorine Co., 200 Matthew St., Rome, N. Y.
Chem. Mfg. & Dist. Co., Easton, Pa.
Chemical Service Co. of Baltimore, Howard & West Sts., Baltimore 30
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Clifton Chemical Co., 62 William St., N. Y.
Davies-Young Soap Co., Dayton, O.
Eagle Soap Corp., Huntington, Ind.
Essential Chemicals Co., 744 N. 4 St., Milwaukee 3
Fuld Bros., 702 S. Wolfe St., Baltimore
James Good, Inc., Kensington, Philadelphia
Haag Laboratories, Inc., 140th & Seeley Ave., Blue Island, Ill.
Harley Soap Co., Pierce & Orthodox Sts., Philadelphia
Hewitt Soap Co., Dayton, O.
Higley Chem. Co., Dubuque, Iowa
Hockwald Chem. Co., 135 Mississippi St., San Francisco
R. M. Hollingshead Corp., Camden, N. J.
Hunt Mfg. Co., Lisbon Rd., Cleveland
Hysan Prods. Co., 932 W. 38th Place, Chicago
Kranich Soap Co., 54 Richards St., Brooklyn
Los Angeles Soap Co., 617 E. 1st St., Los Angeles
Manhattan Kreole Prods., 172 N. 10th St., Brooklyn
Midland Laboratories, 210 Jones St., Dubuque, Iowa
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
Schmidt Soap Products, 236 W. North Ave., Chicago
John T. Stanley Co., 642 W. 30th St., N. Y.
Swift & Co., Chicago 9
Tech. Soap Mfg. Co., S. Chicago Ave., & 73 St.
Trio Chem. Wks., 341 Scholes St., Brooklyn
J. A. Tumbler Labs., 423 Hanover St., Baltimore
Science Industries, 609-15 Geyer Ave., St. Louis
Superior Soap Corp., 121 Nostrand Ave., Brooklyn
U. S. Sanitary Spec. Corp., 1001 S. California Blvd., Chicago 12
Uncle Sam Chem. Co., 575 W. 131st St., N. Y.
G. H. Wood & Co., Toronto, Ont., Canada
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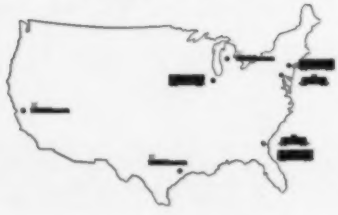

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John H. Calo Co., 19 Rector St., N. Y. 6
T. G. Cooper & Co., Cedar & Venango Sts., Phila.
Falk & Co., Pittsburgh 30
Otto A. C. Hagen Co., 929 Public Ledger Bldg., Phila.
Hasselman, Seaman, de Ryss, Inc., 347 Madison Ave., N. Y. 17
Spencer Kellogg & Sons, Buffalo, N. Y.
Pacific Vegetable Oil Corp., 62 Townsend St., San Francisco
J. H. Redding, Inc., 177 Battery Place, N. Y.
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Arthur C. Trask Co., 4103 S. La Salle St., Chicago
Welch, Holme & Clark Co., 439 West St., N. Y.
G. A. Wharry & Co., 95 Broad St., N. Y. 4

CATALYSTS

Aluminum Co. of America, Gulf Bldg., Pittsburgh
Attapulgus Clay Co., 210 W. Washington Sq., Phila.
J. T. Baker Chem. Co., Phillipsburg, N. J.
Carbide & Carbon Chem., 30 E. 42nd St., N. Y.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Filtrol Corp., 727 W. 7th St., Los Angeles 17
General Chem. Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Harshaw Chem. Co., 1945 E. 97th St., Cleveland 6
Hooker Electrochemical Co., Niagara Falls, N. Y.
Johns-Manville Corp., 22 E. 40th St., N. Y.
Koppers Co., Pittsburgh 19
Michigan Chemical Corp., St. Louis, Mich.
Monsanto Chemical Co., St. Louis 4
Oronite Chem. Co., 38 Sansome St., San Francisco
Wurster & Sanger, Inc., 5201 S. Kenwood Ave., Chicago

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(see also Sheep Dips)

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Ampion Corp., 47-02 5th St., Long Island City, N. Y.
Baird & McGuire, Inc., Holbrook, Mass.
Baums Castorine Co., 200 Mathew St., Rome, N. Y.
California Spray-Chemical Corp., Richmond, Calif.
Carbide & Carbon Chemicals, 30 E. 42 St., N. Y. 17
Cary Mfg. Co., 4949 Mansfield St., San Diego 16, Calif.
Chemical Compounding Corp., 262 Huron St., Brooklyn
Chemical Mfg. & Dist. Co., Easton, Pa.
Chem. Service Co. of Balto, Howard & West Sts., Balto.
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Chipman Chem. Co., Bound Brook, N. J.
Clifton Chemical Co., 62 William St., N. Y.
Corn King Co., Cedar Rapids, Ia.
Crystal Soap & Chem. Co., 6300 State Rd., Phila. 35
Davies-Young Soap Co., Dayton, O.
E. I. du Pont de Nemours & Co., Wilmington, Dela.
Eagle Soap Corp., Huntington, Ind.
Fuld Bros., 702 S. Wolfe St., Baltimore
Geigy Co., 89 Barclay St., N. Y.
General Chem. Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
James Good, Inc., 2116 E. Susquehanna Ave., Phila.
Goulard & Olena, Skillman, N. J.
Haag Laboratories, Inc., Blue Island, Ill.
Harrison Oil Co., 5110 N. 35th St., Milwaukee
Heckathorn & Co., Richmond, Calif.
Higley Chem. Co., Dubuque, Iowa
Hockwald Chem. Co., 135 Mississippi St., San Francisco
R. M. Hollingshead Corp., Camden, N. J.
James Huggins & Son, 239 Medford St., Malden, Mass.
Hysan Prods. Co., 932 W. 38th Place, Chicago
Hunt Mfg. Co., Lisbon Rd., Cleveland
Kemico Mfg. Co., 500 Chancellor Ave., Irvington, N. J.
Ketoid Chem. Co., 339 S. Van Deventer, St. Louis
Koppers Co., Koppers Bldg., Pittsburgh
Lakeland Labs., 625 15th Ave., South, Minneapolis
Lorenz Chem. Co., 135 N. 32nd Ave., Omaha
McLaughlin, Gormley, King Co., Minneapolis, Minn.
Michigan Chem. Corp., St. Louis, Mich.
Nopco Chemical Co., Harrison, N. J.
North Coast Soap & Chem. Wks., Seattle, Wash.
Peck's Prod. Co., 610 E. Clarence Ave., St. Louis
Penna. Salt Mfg. Co., Widener Bldg., Phila.
Rex Research Corp., Toledo
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
St. Lawrence Chem. Co., Ogdensburg, N. Y.
Schaeffer Mfg. Co., 102 Barton St., St. Louis
Shell Chemical Corp., 500 5th Ave., N. Y. 18
Standard Oil Co. (Calif.), 225 Bush St., San Francisco
Standard Oil Co. (Ohio), Midland Bldg., Cleveland
Stauffer Chemical Co., 420 Lexington Ave., N. Y.
Texol Chem. Wks., 75 Ward St., Worcester, Mass.
Thompson-Hayward Chem. Co., 2915 Southwest Blvd., Kansas City, Mo.
Trio Chem. Wks., 341 Scholes St., Brooklyn 6
Uncle Sam Chem. Co., 575 W. 131st St., N. Y.
U. S. Sanitary Spec. Corp., 1001 S. California Blvd., Chicago 12
James Varley & Sons, 1200 Switzer Ave., St. Louis
Velsicol Corp., 330 E. Grand Ave., Chicago
Victory Chem. Co., 148 Fairmount Ave., Phila.
Warren Chemical Prods. Co., 1138 Main Ave. SW, Warren, O.
Robert C. White Co., Chestnut Hill, Phila.
Whitmire Res. Labs., 339 S. Vandeventer, St. Louis

CAUSTIC POTASH

(see also Dealers)

American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
John A. Chew, Inc., 60 E. 42nd St., N. Y. 17
Diamond Alkali Co., Union Commerce Bldg., Cleveland
E. I. du Pont de Nemours & Co., Wilmington
Julius Hyman & Co., Denver, Colo.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Niagara Alkali Co., 60 E. 42nd St., N. Y.
Solvay Sales Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Jos. Turner & Co., Ridgefield, N. J.
Welch, Holme & Clark Co., 439 West St., N. Y.
Westvaco Chem. Div., Food Machy. & Chem. Corp., 405 Lexington Ave., N. Y.

CATTLE SPRAY BASE (see Petroleum Bases)

CAUSTIC POTASH (see Potash, Caustic)

CAUSTIC SODA

(see also Dealers)

American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
Belle Alkali Co., Belle, W. Va.
Brown Company, Portland, Me.
John A. Calo Co., 19 Rector St., N. Y. 6
Champion Fibre Co., Canton, N. C.
John A. Chew, Inc., 60 E. 42 St., N. Y. 17
Diamond Alkali Co., Cleveland 14
Dow Chemical Co., Midland, Mich.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Hooker Electrochemical Co., Niagara Falls, N. Y.
Julius Hyman & Co., Denver, Colo.
Industrial Chem. Sales Div., West Va. Pulp & Paper Co., 230 Park Ave., N. Y.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Kimberley-Clark Paper Co., Neenah, Wis.
Mathieson Chemical Corp., 10 Light St., Balto. 18
Michigan Electrochemical Co., Menominee, Mich.
Monsanto Chemical Co., 1700 S. 2nd St., St. Louis 4
Niagara Alkali Co., 60 E. 42nd St., N. Y.
Niagara Smelting Corp., Niagara Falls, N. Y.
Oxford Paper Co., White Mountains, N. H.
Pennsylvania Salt Mfg. Co., Widener Bldg., Phila.
Pittsburgh Plate Glass Co., Columbia Chemical Div., 5th & Bellefield, Pittsburgh 13
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Solvay Sales Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Southern Alkali Corp., Corpus Christi, Tex.
Stauffer Chem. Co., 420 Lexington Ave., N. Y.
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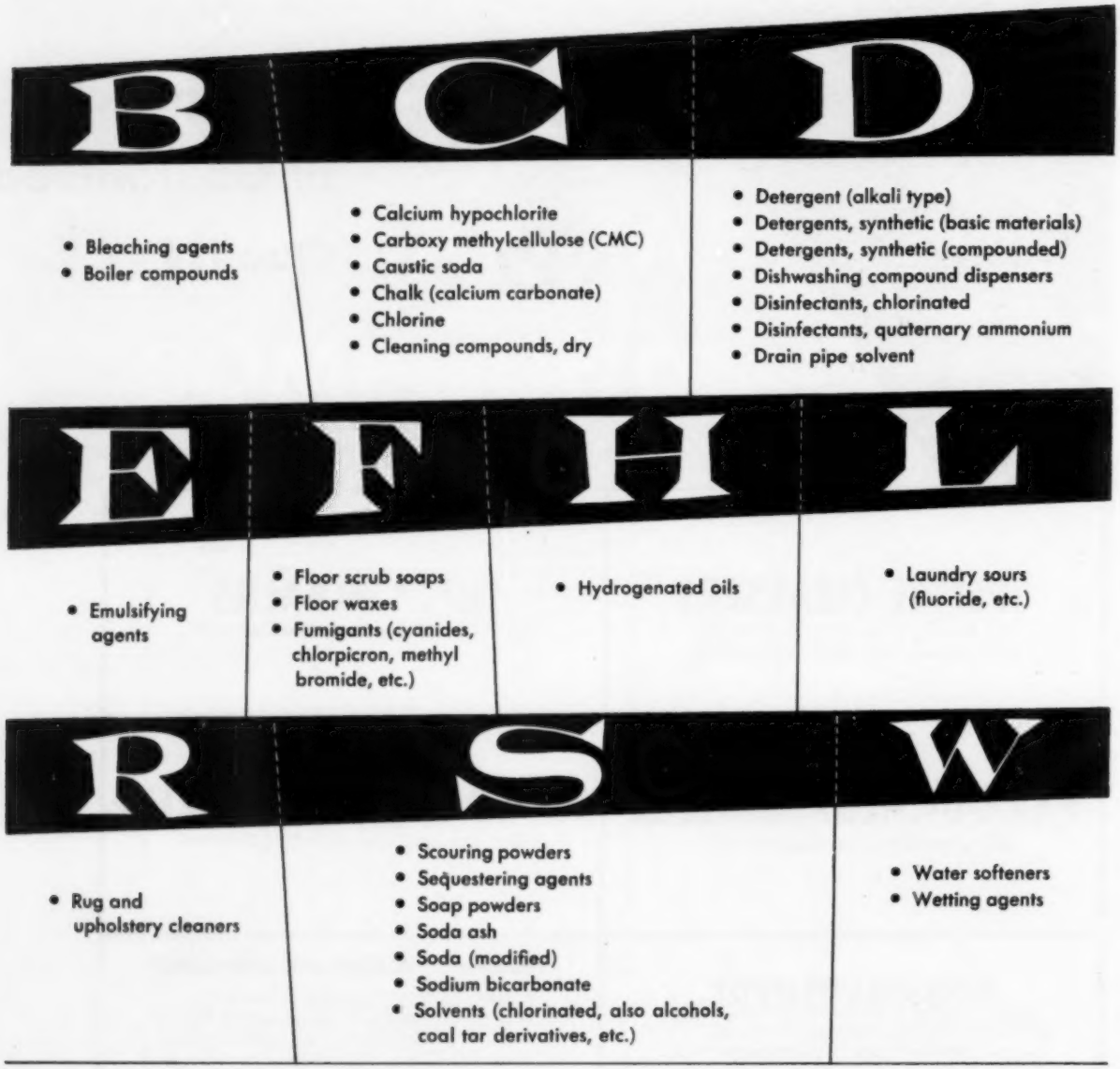

For your convenience we have assembled here all the product headings under which Wyandotte Chemicals Corporation is listed. Of course, this listing tells only part of the story.

"Caustic soda," for instance, gives no hint of the high quality of Wyandotte Caustic Soda, or that it is available in many grades and forms.

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CEDARWOOD OIL (see Essential Oils)

CENTRIFUGALS (special type for continuous process manufacture of neat soap)

Sharples Corp., Philadelphia 40

CERESIN WAX (see Waxes)

CETYL ALCOHOL (see also Fatty Alcohols)

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Bopf Whittam Corp., Linden, N. J.
Givaudan-Delawanna, Inc., 330 W. 42nd St., N. Y.
M. Michel & Co., 90 Broad St., N. Y.
Robinson-Wagner Co., 110 E. 42nd St., N. Y.

CHALK (Calcium Carbonate)

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Binney & Smith Co., 41 E. 42nd St., N. Y.
Charles B. Chrystal Co., 53 Park Pl., N. Y.
Diamond Alkali Co., 300 Union Commerce Bldg., Cleveland 14
E. I. du Pont de Nemours & Co., Wilmington, Del.
Fezandie & Sperrle, 205 Fulton St., N. Y.
K. F. Griffiths Co., 110 E. 42nd St., N. Y.
Charles Hardy, Inc., 420 Lexington Ave., N. Y.
Industrial Chem. Sales Div., West Va. Pulp & Paper Co., 230 Park Ave., N. Y.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Merck & Co., Rahway, N. J.
James H. Rhodes & Co., 157 W. Hubbard St., Chicago
Rosenthal Bercow, 25 E. 26 St., N. Y. 10
L. A. Salomon & Bro., 216 Pearl St., N. Y.
Tamms Industries, Inc., 228 N. La Salle St., Chicago
Charles A. Wagner Co., 813 Callowhill St., Phila.
Whittaker, Clark & Daniels, Inc., 260 W. Broadway, New York
Witco Chemical Co., 295 Madison Ave., N. Y.
Wyandotte Chemicals Corp., Michigan Alkali Div., Wyandotte, Mich.

CHAMOIS

Addison Sponge Co., 118 E. Court St., Cincinnati
Allied Industrial Prods. Co., 620 N. Michigan St., Chicago
Amer. Sponge & Chamois Co., 47 Ann St., N. Y.
Atlas Sponge Co., 291 Church St., N. Y.
Great Eastern Sponge & Chamois Co., 833 N. Patt. Pk. Ave., Baltimore
Jos. Neihaus Co., 341 W. 4th St., Cincinnati
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Schroeder & Tremayne, 500 N. Comml. St., St. Louis

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Lukens Steel Co., Coatesville, Pa.
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago (Used)
Proctor & Schwartz, 7th St. & Tabor Rd., Philadelphia
Chas. Ross & Son Co., 148 Classon Ave., Brooklyn 5
C. G. Sargent's Sons Corp., Graniteville, Mass.
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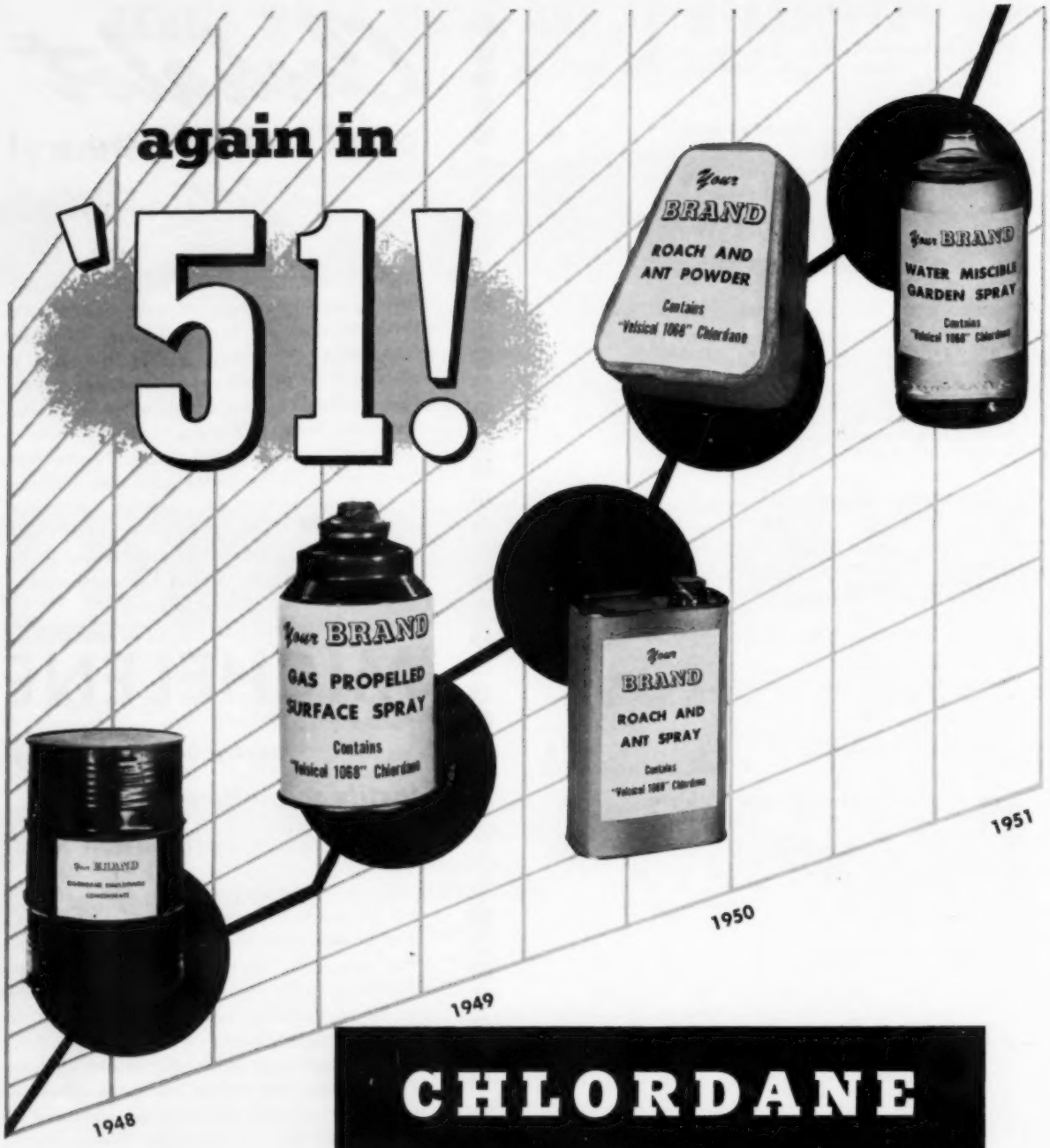

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Wah Chang Trading Corp., 233 Broadway, N. Y. 7
Woburn Chemical Corp., Harrison, N. J.

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Colgate-Palmolive-Peet Co., Jersey City, N. J.
E. F. Drew & Co., 15 E. 26th St., N. Y. 10
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National Milling & Chem. Co., 4601 Nixon St., Phila. 27
Nopco Chemical Co., Harrison, N. J.
National Soap Co., 357 South 25th St., Tacoma, Wash.
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
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Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
Schmidt Soap Products, 236 W. North Ave., Chicago, Ill.
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Geigy Co., 89 Barclay St., N. Y.
General Chemical Division, 40 Rector St., N. Y.
Heckathorn & Co., Richmond, Calif.
McLaughlin, Gormley, King Co., Minneapolis
Michigan Chemical Corp., St. Louis, Mich.
Midland Laboratories, 210 Jones St., Dubuque, Iowa
Miller Products Co., 1932 S. W. Water Ave., Portland, Ore.
S. B. Penick & Co., 50 Church St., New York
Pittsburgh Agr. Chem. Co., 350 Fifth Ave., New York
John Powell & Co., 1 Park Ave., New York
Prentiss Drug & Chem. Co., 110 William St., N. Y.
E. B. Snyder Labs., 2137 E. Harold St., Phila. 25
Stauffer Chemical Co., 420 Lexington Ave., N. Y.
Tech. Soap Mfg. Co., S. Chicago Ave. & 73 St., Chicago
Thompson-Hayward Chem. Co., Kansas City, Mo.
Trio Chemical Wks., 341 Scholes St., Bklyn. 6
Uncle Sam Chem. Co., 575 W. 131st St., N. Y. 27
U. S. Sanitary Specialties Corp., 1001 S. California Ave., Chicago

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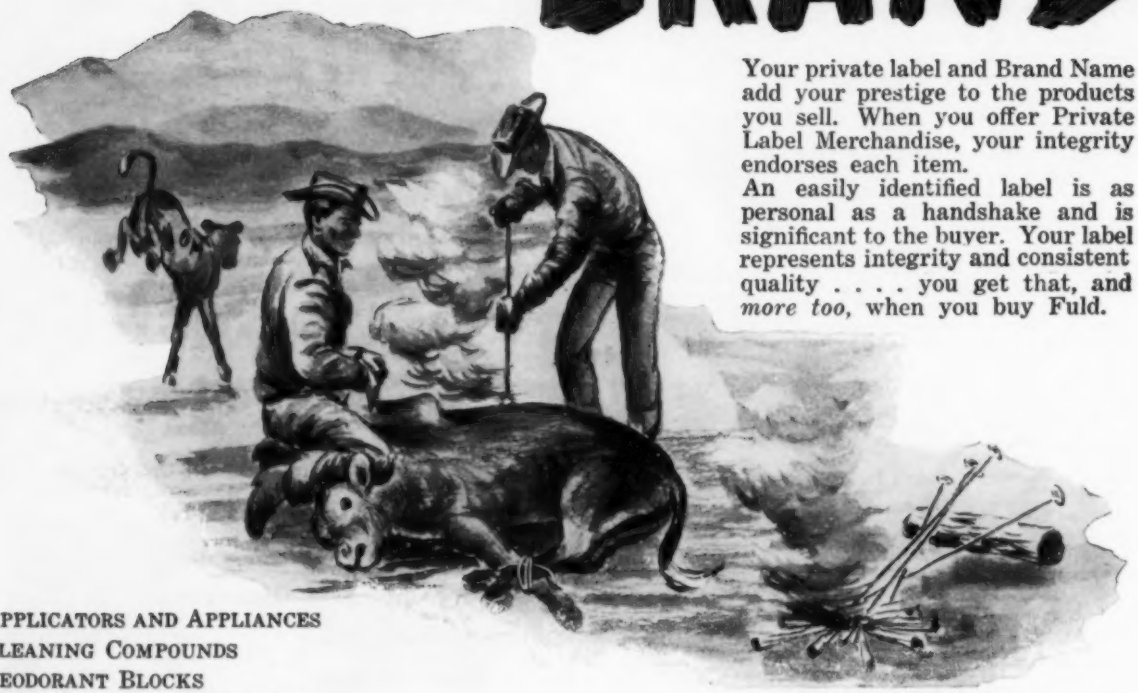

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Hercules Powder Co., Wilmington, Del.
Heyden Chemical Corp., 393—7 Ave., N. Y. 1
Hooker Electrochemical Co., Niagara Falls, N. Y.
Julius Hyman & Co., Denver, Colo.
Innis, Speiden & Co., 117 Liberty St., N. Y.
John Wiley Jones Co., Caledonia, N. Y.
Mathieson Chemical Co., 10 Light St., Balto. 18
Monsanto Chemical Corp., 1700 S. 2nd St., St. Louis
Niagara Alkali Co., 60 E. 42nd St., N. Y.
Pennsylvania Salt Mfg. Co., Widener Bldg., Phila.
Pittsburgh Plate Glass Co., Columbia Chemical Div., 5th & Bellefield, Pittsburgh 13
Solvay Sales Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Stauffer Chem. Co., 420 Lexington Ave., N. Y.
Jos. Turner & Co., Ridgefield, N. J.
Virginia-Carolina Chem. Corp., Richmond 5, Va.
Westvaco Chem. Div., Food Mach. & Chem. Corp., 405 Lexington Ave., N. Y.
Wyandotte Chemicals Corp., Michigan Alkali Div., Wyandotte, Mich.

CHLORINE DIOXIDE

Mathieson Chemical Co., 10 Light St., Balto. 18

CHLORINE DISINFECTANTS (see Disinfectants)

CHLOROPHYLL

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Harshaw Chemical Co., 1945 E. 97th St., Cleveland
Interstate Color Co., 5 Beekman St., N. Y.
Magnus, Mabee & Reynard, 16 Desbrosses St., N. Y.
Merck & Co., Rahway, N. Y.
S. B. Penick & Co., 50 Church St., N. Y.
Prentiss Drug & Chem. Co., 110 William St., N. Y.
Pylam Products Co, 799 Greenwich St., N. Y.
Rosenthal Bercow Co., 25 E. 26th St., N. Y. 10
Sandoz Chem. Works, Inc., 61 Van Dam St., N. Y.
Schimmel & Co., 601 W. 26th St., N. Y.
Welch, Holme & Clark Co., 439 West St., N. Y. 14

CITRAL (see Aromatic Chemicals)

CITRONELLAL (see Aromatic Chemicals)

CITRONELLA OIL (see Essential Oils)

CITRONELLOL (see Aromatic Chemicals)

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California Industrial Minerals Co., Friant, Calif.
Carolina Pyrophyllite Co., 10 E. 40th St., N. Y. 16
Charles B. Chrystal Co., 53 Park Pl., N. Y.
Dicalite Div., 612 S. Flower St., Los Angeles, Calif.
Fezandie & Sperrle, 205 Fulton St., N. Y.
Filtrol Corp., 727 7th St., Los Angeles
Floridin Co., 220 Liberty St., Warren, Pa.
Georgia Kaolin Co., 433 N. Broad St., Elizabeth, N. J.
Harshaw Chemical Co., 1945 E. 97th St., Cleveland 6
Heckathorn & Co., Richmond, Calif.
Hercules Powder Co., Wilmington, Del.
J. M. Huber, Inc., 100 Park Ave., N. Y.
Illinois Silica Co., Cairo, Ill.
Industrial Chem. Sales Div., West Va. Pulp & Paper Co., 230 Park Ave., N. Y.
Innis, Speiden & Co., 117 Liberty St., N. Y.
International Silica Co., Cairo, Ill.
Monetta Clay Corp., 601 Carolina Life Bldg., Columbia, S. C.
Owyhee Chemical Products Co., 300 W. Adams St., Chicago
Peerless Clay & Mineral Co., Pueblo, Colo.
Rosenthal Bercow Co., 25 E. 26th St., N. Y. 10
L. A. Salomon & Bro., 216 Pearl St., N. Y.
F. E. Schundler & Co., Joliet, Ill.
Sinclair Refining Co., East Chicago, Ind.
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Standard Oil Co. (Ind.), 910 S. Michigan Ave., Chicago
Tamms Industries, Inc., 228 N. LaSalle St., Chicago
United Clay Mines Corp., 101 Oakland St., Trenton, N. J.
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Whittaker, Clark & Daniels, 260 W. Broadway, N. Y.
Witco Chemical Co., 295 Madison Ave., N. Y.
Wyodak Chem. Co., 4600 E. 71 St., Cleveland

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American Chemical Paint Co., Ambler, Pa.
American Oil & Disinfectant Co., 80 8th Ave., N. Y. 11
American Soap & Washoline Co., Cohoes, N. Y.
Ampion Corp., 47-02 5th St., Long Island City, N. Y.
A-M-R Chem. Co., 985 E. 35 St., Bklyn. 10
Analab Labs., 285 Franklin St., Boston 10
Antara Prods., Div. of General Dyestuff Corp., 435 Hudson St., N. Y. 14
Antiseptol Co., 5524 Northwest Highway, Chicago
Armour & Co., 1355 W. 31st, Chicago
Baird & McGuire, Inc., Holbrook, Mass.
Banner Chem. Prods. Co., 60 Elm St., Newark, N. J.
Baums Castorine Co., 200 Mathew St., Rome, N. Y.
Boston Chemical Industries, 64 E. Brookline St., Boston
Breuer Electric Mfg. Co., 5100 N. Ravenswood Ave., Chicago
Brilco Laboratories, 1553 63rd St., Brooklyn 19
Buckingham Wax Co., 51-03 Van Dam St., L. I. City, N. Y.
Cadet Laboratories, 10 Clarence St., Worcester 5, Mass.
Candy & Co., 2515 W. 35th St., Chicago 32
Carlstadt Chem. Co., Carlstadt, N. J.
Cenol Co., 4250 N. Pulaski Ave., Chicago
Chemical Compounding Corp., 262 Huron St., Brooklyn
Chemical Mfg. & Dist. Co., Easton, Pa.
Chemical Service Co., Baltimore 30, Md.
Chicago Sanitary Prods. Co., 3100 S. Throop St. Chicago
Churchill Mfg. Co., Galesburg, Ill.
Clark Sanding Mach. Co., Muskegon, Mich.
Clifton Chemical Co., 62 William St., N. Y.
CMC Laboratories Co., 15 Vandewater St., N. Y. 7
Cole Laboratories, 22-19 37th Ave., L. I. City, N. Y.
Continental Car-Na-Var Corp., Brazil, Ind.
Crystal Soap & Chem. Co., 6300 State Rd., Philadelphia
Curran Corp., Lawrence, Mass.
Davies-Young Soap Co., Dayton, Ohio
Dow Chemical Co., Midland, Mich.
Diversey Corp., 53 W. Jackson Blvd., Chicago
E. I. du Pont de Nemours & Co., Wilmington, Del.
Eagle Soap Corp., Huntington, Ind.
Emulsol Corp., 59 E. Madison St., Chicago
Essential Chem. Co., 744 N. 4 St., Milwaukee 3
Fairfield Labs., Inc., 417 Cleveland Ave., Plainfield, N. J.
Fine Organics, Inc., 211 E. 19 St., N. Y. 3
Franklin Research Co., 5134 Lancaster Ave., Phila., Pa.
Fuld Bros., 702 So. Wolfe St., Baltimore
Gaylord Chem. Co., 701 Woodsweather Rd., Kansas City
Gleamite Co., Coudersport, Pa.
James Good, Inc., 2116 E. Susquehanna Ave., Phila.
Haag Laboratories, Inc., 140th & Seely Ave., Blue Island, Ill.
Harley Soap Co., Pierce & Orthodox Sts., Phila.
Hercules Chem. Co., 332 Canal St., N. Y.
Higley Chemical Co., Dubuque, Iowa
Hockwald Chem. Co., 135 Mississippi St., San Francisco, Cal.
R. M. Hollingshead Corp., Camden, N. J.
James Huggins & Son, Madden, Mass.
Hull Co., 305 Washington St. Brooklyn
Hygiene Products, 169 St. Cyr, Montreal, Can.
Hysan Prods. Co., 932 W. 38th Place, Chicago
Kearny Mfg. Co., Kearny, N. J.
Knoxall Corp., Indianapolis, Ind.
H. Krevit & Co., 73 Welton St., New Haven, Conn.
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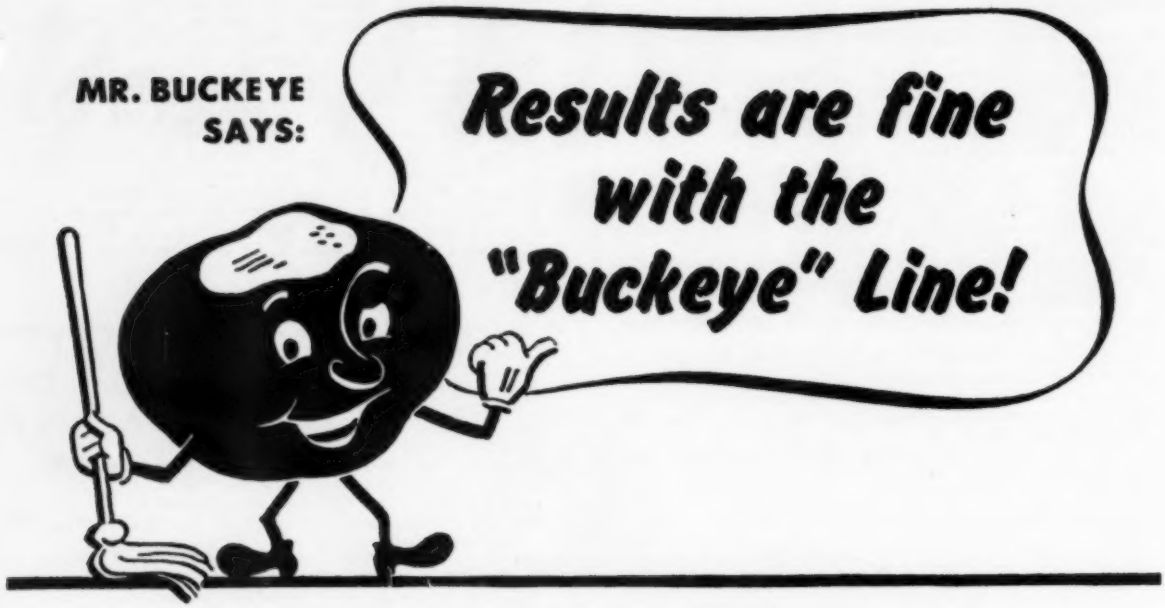

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Miranol Chem. Co., 16 Melville Pl., Irvington, N. J.
Multi-Clean Prods., Inc., 2277 Ford P'kway, St. Paul, Minn.
Murro Chemical Co., P. O. Box 185, Asheville, N. C.
Mutual Chem. & Supply Co., 257 W. Gay St., Columbus, Ohio
Ninol Laboratories, 1719 S. Clinton St., Chicago 16
Nopco Chemical Co., Harrison, N. J.
Oil-Kraft, Inc., 3330 Beekman St., Cincinnati
Oronite Chemical Co., 38 Sansome St., San Francisco
J. C. Paul & Co., 930 Roscoe St., Chicago 13
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Penna. Salt Mfg. Co., Widener Bldg., Phila.
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Quaker Chem. Prods. Co., Conshohocken, Pa.
Refined Prods. Corp., Lyndhurst, N. J.
Rex-Cleanwall Corp., Brazil, Ind.
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Stepan Chem. Co., 1353 N. Branch St., Chicago 22
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Tech. Soap Co., 7310 S. Chicago Ave., Chicago
Thompson-Hayward Chem. Co., 2915 Southwest Blvd., Kansas City, Mo.
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James Varley & Sons, 1200 Switzer Ave., St. Louis
Vestal, Inc., 4963 Manchester St., St. Louis 10
Warwick Wax Co., 10-10 44th Ave., L. I. City 1, N. Y.
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Welch, Holme & Clark Co., 439 West St., N. Y.
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G. H. Wood & Co., Toronto, Canada
Woodlets, Inc., Portland, Pa.
Zeen Chemical Co., 200 Elm St., Cleveland 13

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American Oil & Disinfectant Co., 80 8th Ave., N. Y. 11
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A-M-R Chemical Co., 985 E. 35th St., Brooklyn 18
Analab Labs., 285 Franklin St., Boston 10
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Armour & Co., 1355 W. 31st St., Chicago
Axton-Cross Co., Shelton, Conn.
B. T. Babbitt, Inc., 386—4th Ave., N. Y. 16
Baird & McGuire, Inc., Holbrook, Mass.
Baums Castorine Co., 200 Mathew St., Rome, N. Y.
Banner Chem. Prods. Co., 60 Elm St. Newark 5
Beach Soap Co., Lawrence, Mass.
Blockson Chemical Co., Joliet, Ill.
Bonewitz Chemicals, Inc., Burlington, Ia.
Boston Chem. Industries, 64 E. Brookline St., Boston 18
Brilco Laboratories, 1553 63rd St., Brooklyn, N. Y.
California Industrial Minerals Co., Friant, Calif.
Philip Carey Mfg. Co., Lockland, Cincinnati
Cary Mfg. Co., 4849 Mansfield St., San Diego 16, Calif.
Carlstadt Chem. Co., Carlstadt, N. J.
Chemical Mfg. & Dist. Co., Easton, Pa.
Chem. Service Co. of Balto., Howard & West Sts., Balto.
Clarkson Co., 919 N. 9th St., Phila. 23
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Click Chemical Corp., 41 Morrell St., Brooklyn
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Cole Labs., 22-19—37th Ave., Long Island City
Columbia Soap & Chem. Co., Inc., 217-221 Clara St., San Francisco
Continental Car-Na-Var Corp., Brazil, Ind.
Cowles Chemical Co., Cleveland, Ohio
Crystal Labs., Inc., 21 W. Park Way, N. E., Pittsburgh
Crystal Soap & Chem. Co., 6300 State Rd., Philadelphia
Cudahy Packing Co., 221 N. LaSalle St., Chicago
Davies-Young Soap Co., Dayton, O.
Diversey Corp., 53 W. Jackson Blvd., Chicago
E. F. Drew & Co., 15 E. 26 St., N. Y. 10
E. I. du Pont de Nemours & Co., Wilmington, Dela.
Eagle Soap Corp., Huntington, Ind.
Emeryville Chem. Co., 405 Montgomery St., San Francisco
Emulsol Corp., 59 E. Madison St., Chicago
Essential Chem. Co., 744 N. 4 St., Milwaukee 3
Fairfield Labs., Inc., 417 Cleveland Ave., Plainfield, N. J.
Filtrol Corp., 727 W. 7th St., Los Angeles
Fuld Bros., 702 S. Wolfe St., Baltimore
Gaskill Products, 9 S. Letitia St., Phila.
Gaylord Chem. Co., 505 W. 5th St., Kansas City, Mo.
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Goulard & Olena, Inc., Skillman, N. J.
Hercules Chem. Co., 332 Canal St., New York
Higley Chemical Co., Dubuque, Iowa
Hockwald Chem. Co., 135 Mississippi St., San Francisco
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Hysan Prods. Co., 932 W. 38th Place, Chicago
J. Chemical Works Co., 437 Eleventh Ave., N. Y.
Kessler Chem. Co., State Rd., Phila. 35
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H. Kohnstamm & Co., 91 Park Pl., N. Y.
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Puritan Chem. Co., Atlanta, Ga.
Quaker Chem. Prods. Co., Conshohocken, Pa.
Rex-Cleanwall Corp., Brazil, Ind.
Theo. B. Robertson Prods Co., 700 W. Division St., Chicago
Rulon Laboratories, Bryant Bldg., Kansas City
Rumford Chemical Wks., Rumford, R. I.
Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
Savin Products Co., 1221 Dorchester Ave., Boston 25
Science Industries, 609-15 Geyer Ave., St. Louis
Skotch Products Corp., 2710 Detroit Ave., Cleveland
Slick-Shine Co., 207 Astor St., Newark, N. J.
E. B. Snyder Labs., 2137 E. Harold St., Philadelphia
Solshine Mfg. Co., 44 Brookline St., Boston
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Swift & Co., Chicago 9
Tesco Chem. Co., P. O. Box 4748, Atlanta
Tech. Soap Mfg. Co., S. Chicago Ave. & 73 St., Chicago
Tennessee Soap Co., 1702 N. Thomas Ave., Memphis 1, Tenn.
Thompson-Hayward Chem. Co., 2915 Southwest Blvd., Kansas City, Mo.
Trio Chem. Wks., 341 Scholes St., Bklyn.
Ultra Chem. Wks., Box 1536, Paterson, N. J.
Uncle Sam Chem. Co., 573 W. 131st St., N. Y.
United Cleanser Mfg. Co., Cambridge, Mass.
U. S. Sanitary Spec. Corp., 1091 S. California Blvd., Chicago 12
Universal Chlorinator Co., 3418 W. Pico Blvd., Los Angeles
James Varley & Sons, 1200 Switzer Ave., St. Louis
Virginia-Carolina Chem. Corp., Richmond 5, Va.
Warren Soap Mfg. Co., 51 Waverly St. Cambridge, Mass.
Welch, Holme & Clark Co., 439 West St., N. Y.
G. H. Wood & Co., Toronto, Canada
Woodlets, Inc., Portland, Pa.
Wyandotte Chemicals Corp., J. B. Ford Div., Wyandotte, Mich.
York Chemical Co., 23 Dean St. Bklyn.
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Ampion Corp., 4-88—47th Ave., Long Island City, N. Y.
A-M-R Chemical Co., 985 E. 35th St., Brooklyn 18
Analab Labs., 285 Franklin St., Boston 10
An-Fo Mfg. Co., 3129 Elmwood Ave., Oakland, Calif.
Armour & Co., 1355 W. 31st St., Chicago
Atlantic Refining Co., 260 South Broad St., Phila.
Atlas Powder Co., Wilmington 99, Dela.
Baums Castorine Co., 200 Mathew St., Rome, N. Y.
Boston Chem. Industries, 64 E. Brookline St., Boston 18
Brilco Laboratories, 1553 63rd St., Brooklyn 19
Cadet Laboratories, 10 Clarence St., Worcester 5, Mass.
Chem. Mfg. & Dist. Co., Easton, Pa.
Chem. Service Co. of Balto., Howard & West Sts., Balto.
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Clifton Chem. Co., 62 William St., N. Y.
Cole Labs., 22-19 37th Ave., L. I. City, N. Y.
Connecticut Chem. Research Corp., Bridgeport 5, Conn.
Curran Corp., Lawrence, Mass.
Davies-Young Soap Co., Dayton, O.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Eagle Soap Corp., Huntington, Ind.
Elkay Products Corp., 323 W. 16th St., N. Y.
Emulsol Corp., 59 E. Madison St., Chicago
Fairfield Labs., Inc., 417 Cleveland Ave., Plainfield, N. J.
Fine Organics, Inc., 211 E. 19 St., N. Y. 3
Fuld Bros., 702 S. Wolfe St., Baltimore
Higley Chem. Co., Dubuque, Iowa
Arnold Hoffman Co., Providence, R. I.
R. M. Hollingshead Corp., Camden, N. J.
James Huggins & Son, Malden, Mass.
Hygiene Products, 169 St. Cyr, Montreal, Can.
Hysan Prods. Co., 932 W. 38th Place, Chicago
Kearny Mfg. Co., Kearny, N. J.
Koppers Co., Koppers Bldg., Pittsburgh
H. Krevit & Co., 73 Welton St., New Haven, Conn.
Manhattan Kreole Prods., 172 10th St., Brooklyn
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Pennsylvania Refining Co., Butler, Pa.
Penna. Salt Mfg. Co., Widener Bldg., Phila.
Science Industries, 609-15 Geyer Ave., St. Louis
Skotch Prods. Corp., 2710 Detroit Ave., Cleveland
Slick-Shine Co., 207 Astor St., Newark, N. J.
E. B. Snyder Labs., 2137 E. Harold St., Phila. 25
Standard Oil Co., (Calif), 225 Bush St., San Francisco
Standard Oil Co. (Ind.), 910 S. Michigan Ave., Chicago
Stepan Chem. Co., 1353 N. Branch St., Chicago 22
Tech. Soap Mfg. Co., S. Chicago Ave. & 73 St., Chicago
Tesco Chem. Co., P. O. Box 4748, Atlanta
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Perl Mach. Mfg. Co., 68 Jay St., Brooklyn 1
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Standard Spec. & Tube Co., New Brighton, Pa.

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Aridor Co., 3428 W. 48th Pl., Chicago
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Continental Can Co., 100 E. 42nd St., N. Y.
Crown Cork & Seal Co., Baltimore
Owens-Illinois Glass Co., Toledo, O.
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Tar Residuals, Inc., 420 Lexington Ave., N. Y.

CRUTCHERS

Allied Steel & Equipment Co., Chester, N. J.
Atlas Steel Construction Co., Irvington, N. J.
Chemical & Process Machy. Corp., 146 Grand St., N. Y. 13 (Used)
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
Edge Moor Iron Wks., Edge Moor, Del.
First Machy. Corp., 157 Hudson St., N. Y. (Used)
Houchin Machinery Co., Hawthorne, N. J.
Huber Machine Co., 259—46th St., Brooklyn
Industrial Process Engineers, 8 Lister Ave., Newark 5
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago
Patterson-Kelley Co., East Stroudsburg, Pa.
H. K. Porter Co., Oliver Bldg., Pittsburgh
Struthers-Wells Co., Warren, Pa.

CUBE

Chipman Chem. Co., Bound Brook, N. J.
Derris, Inc., 120 Wall St., N. Y.
Enco Chem. Corp., 441 Lexington Ave., N. Y.
Greene Trading Co., 70 Pine St., N. Y.
Hammond Paint & Chem. Co., Beacon, N. Y.
Heckathorn & Co., Richmond, Calif.
Ketoid Chem. Co., 549 W. Washington, Chicago
Lenape Trading Co., 233 Broadway, N. Y.
Miller Products Co., 1932 S. W. Water Ave., Portland, Ore.
Orbis Products Corp., 215 Pearl St., N. Y.
S. B. Penick & Co., 50 Church St., N. Y.
John Powell & Co., 1 Park Ave., N. Y.
Prentiss Drug & Chem. Co., 110 William St., N. Y.
Frank B. Ross Co., 507—8th St., Hoboken, N. J.
Stauffer Chemical Co., 420 Lexington Ave., N. Y.
U. S. Industrial Chemicals, Inc., 60 E. 42nd St., N. Y. C.
Whitmire Research Corp., 839 S. Vandeventer, St. Louis.

CUTTING TABLES (see Soap Machinery)

CYANIDES (see Fumigants) (see Sodium Cyanide)

DDT (Dichloro-diphenyl-trichloroethane)

E. I. du Pont de Nemours & Co., Wilmington, Del.
Geigy Co., Inc., 89 Barclay St., N. Y.
General Chemical Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
R. W. Greeff & Co., 10 Rockefeller Plaza, N. Y.
Kolker Chem. Works, 80 Lister Ave., Newark, N. J.
Michigan Chem. Corp., St. Louis, Mich.
Monsanto Chemical Co., 1700 S. 2nd St., St. Louis, Mo.
Montrose Chem. Co., 120 Lister Ave., Newark, N. J.
Pennsylvania Salt Mfg. Co., Widener Bldg., Phila.
Pittsburgh Agricultural Chem. Co., 350 Fifth Ave., N. Y.
John Powell & Co., 1 Park Ave., N. Y. 16
Rohm & Haas Co., 222 W. Washington Sq., Phila.
Stauffer Chemical Co., 420 Lexington Ave., N. Y.
Westvaco Chem. Div., Food Machy. & Chem. Corp., 405 Lexington Ave., N. Y.

DDT FORMULATIONS (Liquids and Powders)

Analab Labs., 285 Franklin St., Boston 10
Boston Chem. Industries, 64 E. Brookline St., Boston 18
Brilco Laboratories, 1553 63rd St., Brooklyn 19
Central Chemical Co., 5137 S. West Ave., St. Louis
Chem. Corp. of Colorado, 12th and Quivas, Denver
Chemical Mfg. & Dist. Co., Easton, Pa.
Connecticut Chem. Research Corp., Bridgeport, Conn.

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Elkay Prods. Co., 323 W. 16 St., N. Y. 11
Eston Chemicals, Inc., 3100 E. 26th St., Los Angeles
Fuld Bros., 702 S. Wolfe St., Baltimore
Geigy Co., Inc., 89 Barclay St., N. Y.
Griffin Chem. Co., 1000 16th St., San Francisco
Heckathorn & Co., Richmond, Calif.
Hercules Powder Co., Wilmington, Del.
Hysan Products Co., 932 W. 38th Pl., Chicago
Innis, Speiden & Co., 117 Liberty St., N. Y. 6
Industrial Management Corp., 458 S. Spring St., Los Angeles, Calif.
McLaughlin, Gormley, King Co., Minneapolis
Michigan Chemical Corp., St. Louis, Mich.
Midland Laboratories, Dubuque, Iowa
Miller Products Co., 1932 S. W. Water Ave., Portland, Ore.
Orbis Products Corp., 215 Pearl St., N. Y.
S. B. Penick & Co., 50 Church St., N. Y.
Penna. Salt Mfg. Co., Widener Bldg., Phila.
Pittsburgh Agricultural Chem. Co., 350 Fifth Ave., N. Y.
John Powell & Co., 1 Park Ave., N. Y.
Prentiss Drug & Chem. Co., 110 William St., N. Y.
Quaker Chem. Prods. Co., Conshohocken, Pa.
Regal Chem. Corp., Bklyn., 22
Rohm & Haas Co., 222 W. Washington Sq., Phila.
E. B. Snyder Labs., 2137 E. Harold St., Phila. 35
Thompson-Hayward Chem. Co., Kansas City 8, Mo.
Trio Chemical Wks., 341 Scholes St., Brooklyn, 6
Uncle Sam Chemical Co., 575 W. 131 St., N. Y. 27
U. S. Sanitary Specialties Corp., 1001 S. California Ave., Chicago
Virginia-Carolina Chem. Corp., Richmond 8, Va.
Westvaco Chem. Div., Food Machy. & Chem Corp., 405 Lexington Ave., N. Y. 17

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American Oil & Supply Co., 236 Wilson Ave., Newark, N. J.
Arnold, Hoffman & Co., 55 Canal St., Providence, R. I.
Axton-Cross Co., Shelton, Conn.
Baker & Gaffney, Drexel Bldg., Philadelphia
H. J. Baker & Bro., 271 Madison Ave., N. Y.
Barada & Page, Kansas City, Mo.
S. H. Bell Co., 1407 Gulf Bldg., Pittsburgh
Benner Chemical Co., 20 N. Wacker St., Chicago
Braun-Knecht-Heimann Co., 584 Mission St., San Francisco
Buckeye Soda Products Co., 32 Main St., Cincinnati
John H. Calo & Co., 19 Rector St., N. Y.
John A. Chew, Inc., 60 E. 42nd St., N. Y.
Alan A. Claflin, 88 Broad St., Boston
Clarkson Co., 919 N. 9 St., Phila. 23
Consumers Chemical Co., Drexel Bldg., Philadelphia
T. G. Cooper & Co., Cedar & Venango Sts., Phila. 34
Dickerson Co., Drexel Bldg., Phila.
Doe & Ingalls, 56 Garden St., Boston
A. C. Drury & Co., 219 E. North Water St., Chicago
Eastern Industries, Ridegfield, N. J.
Eaton Clark Co., 1490 Franklin St., Detroit
Elgo Trading Corp., 220 Broadway, N. Y. 7
Elkay Products Co., 323 W. 16th St., N. Y.
Enco Chem. Corp., 441 Lexington Ave., N. Y.
F. P. L. Chemical Co., 647 West Virginia St., Milwaukee
Faesy & Besthoff, 325 Spring St., N. Y.
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Fort Pitt Chemical Co., 3134 Penn Ave., Pittsburgh
Gaylord Chem. Co., 701 Woodswether Rd., Kansas City
Globe Chemical Co., Murray Road, Cincinnati
James Good Co., Susquehanna Ave., Phila. 25
Griffin Chem. Co., 1000 16th St., San Francisco
Otto A. C. Hagen Corp., 929 Public Ledger Bldg., Phila.
C. P. Hall Co., Akron, Ohio
Harshaw Chemical Co., 1945 E. 97th St., Cleveland
Heckathorn & Co., Richmond, Calif.
Herbert Chem. Co., Vine & Murray Rd., Cincinnati
Howe & French, 99 Broad St., Boston

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Innis, Speiden & Co., 117 Liberty St., N. Y.
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P. J. Lo Bue Co., 277 Park Ave., N. Y.
Los Angeles Chem. Co., 2200 Santa Fe Ave., Los Angeles
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George Mann & Co., 251 Fox Point Blvd. Providence, R. I.
Merchants Chemical Co., 60 East 40th St., N. Y.
Millard-Heath Co., 14 Pine St., St. Louis
Clarence Morgan & Co., 919 N. Michigan Ave., Chicago
Mulcahy & Griffin, 141 Milk St., Boston
National Oil & Supply Co., 172 Frelinghuysen Ave., Newark, N. J.
National Sales Co., 31 E. 13th St., Cincinnati
Wm. D. Neuberg Co., 420 Lexington Ave., N. Y.
Newman Tallow & Soap Machinery Co., 1051 W. 35th St., Chicago
R. Peltz Co., 995 Drexel Bldg., Philadelphia
Pfaltz & Bauer, Inc., 350 5th Ave., N. Y.
Philipp Bros. Chemicals, 37 Wall St., N. Y.
H. B. Prior Co., 420 Lexington Ave., N. Y.
Providence Textile Chem Co., 2 Randall St., Providence, R. I.
Chas. L. Read & Co., 120 Greenwich St., N. Y.
R. F. Revson Co., 144 W. 18th St., N. Y.
G. S. Robins & Co., 126 Chouteau Ave., St. Louis
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Rogers & McClellan, 143 Milk St., Boston
Rohm & Haas Co., Inc., 222 W. Washington Sq., Phila.
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Sanders & Sloat, 180 Bdway., N. Y.
H. J. Rolls Chemical Co., Buffalo, N. Y.
George Senn, Philadelphia Bourse, Phila.
Sessions-Gifford Co., 255 Allens Ave., Providence, R. I.
Siegel Chem Co., 1 Hanson Pl., Brooklyn
Irving M. Sobin Co., 72-74 Granite St., Boston
J. U. Starkweather Co., Providence, R. I.
Tar Residuals, Inc., 420 Lexington Ave., N. Y.
Thompson-Hayward Chem. Co., 2915 Southwestern Blvd., Kansas City
Arthur C. Trask Co., 4103 S. La Salle St., Chicago, Ill.
Jos Turner & Co., Ridgefield, N. J.
Verona Chem. Co., 26 Verona Av., Newark, N. J.
Chas. A. Wagner Co., 813 Callowhill St., Phila.
Welch, Holme & Clark Co., 439 West St., N. Y.
G. A. Wharry & Co., 95 Broad St., N. Y. 4

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Eastern Industries, Ridgefield, N. J.
William Eisenstadt, 141 W. Jackson Blvd., Chicago
Elgo Trading Corp., 220 Broadway, N. Y. 7
E. H. Frey Co., 2 Broadway, N. Y.
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A. W. Harris Oil Co., Providence, R. I.
Hasselman, Seaman, de Ryss, Inc., 347 Madison Ave., N. Y.
O. G. Innes Corp., 82 Wall St., N. Y.
E. G. James Co., 332 So. La Salle St., Chicago
Kullman & Co., 339 Produce Exchange, N. Y.
Leghorn Trading Co., 21 West St., N. Y.
Miller & Co., 2401 Chestnut St., Philadelphia
Clarence Morgan & Co., 919 N. Michigan, Chicago
Murray Oil Products Co., 21 West St., N. Y.
Newman Tallow & Soap Machinery Co., 1501 W. 35th St., Chicago
Rayner & Stonington, 79 Wall St., N. Y.
Chas. L. Read & Co., 120 Greenwich St., N. Y.
Rosenthal Bercow Co., 25 E. 26 St., N. Y. 10
Willibald Schaefer Co., Foot of Boemen Ave., St. Louis
George Senn, Philadelphia Bourse, Phila.
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Resin, Dispersions and Emulsions
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Rosin, Derivatives
Rosin, Hydrogenated
Rosin, Polymerized

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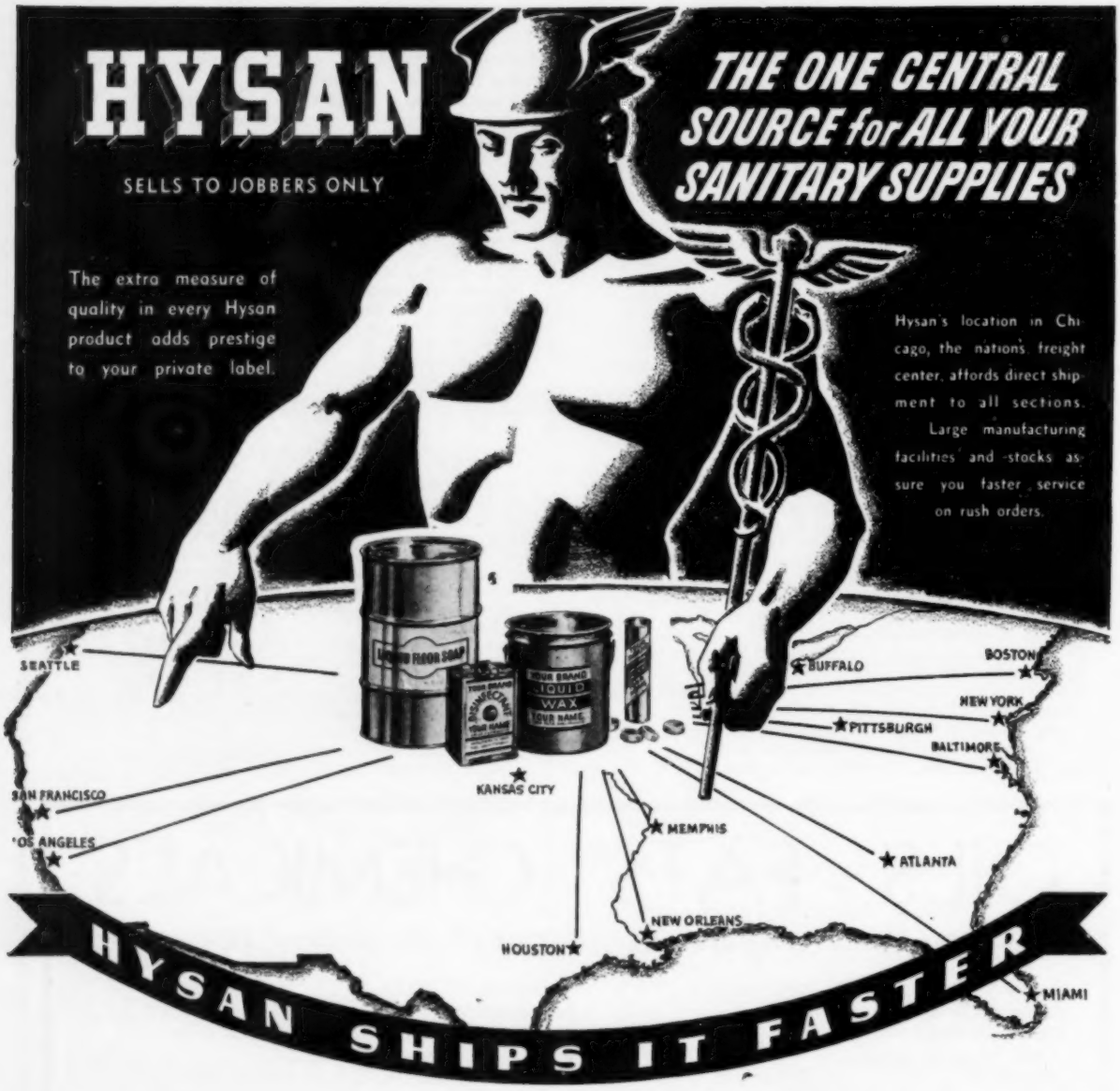

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Welch, Holme & Clark Co., 439 West St., N. Y.
G. A. Wharry & Co., 95 Broad St., N. Y. 4

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Cliffs-Dow Chem. Co., Marquette, Mich.
Darco Sales Corp., 60 E. 42nd St., N. Y.
Durkee Famous Foods, Inc., 2670 Elston Ave., Chicago
Filter Paper Co., 2464 S. Michigan Ave., Chicago
R. W. Greeff & Co., 10 Rockefeller Plaza, N. Y.
Industrial Chem. Sales Div., West Va. Pulp & Paper Co., 230 Park Ave., N. Y.
L. A. Salomon & Bros., 216 Pearl St., N. Y.
Witco Chemical Co., 295 Madison Ave., N. Y.

DEGRAS (see Wool Grease)

DEGREASING COMPOUNDS (see Cleaners, Liquid)

DEODORANT SOAP (see Soaps, Antiseptic)

DEODORIZED BASE OILS (See Petroleum Insecticide Base Oils, Deodorized)

DEODORIZED KEROSENE (see Petroleum Insecticide Base Oils)

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Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
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Dutro Co., 2155 Webster St., Alameda, Calif.
Eagle Soap Corp., Huntington, Ind.
Edelman Co., 6249 S. St. Lawrence Ave., Chicago
Elkay Products Corp., 323 W. 16th St., N. Y.
Fuld Bros., 702 S. Wolfe St., Baltimore
Garnet Chem. Corp., 911 N. Lumber St., Allentown, Pa.
Hockwald Chem. Co., 135 Mississippi St., San Francisco
Hygiene Prods., 169 St. Cyr, Montreal, Can.
Hysan Prods. Co., 932 W. 38th Place, Chicago
Jansen Soap & Chemical Co., 324 Leavenworth St., San Francisco, Cal.
National Sanitary Chem. Co., Baltimore, Md.
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Rochester Germicide Co., 333 Hollenbeck St., Rochester 5, N. Y.
Uncle Sam Chemical Co., 573 W. 131st St., N. Y. C.
U. S. Sanitary Specialties Corp., 1001 S. California Ave., Chicago 12

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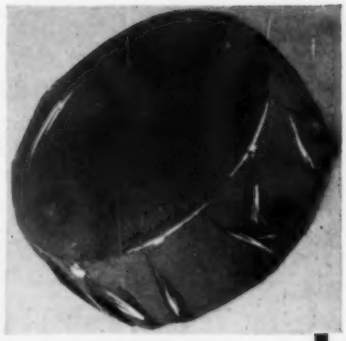
Analab Labs., 285 Franklin St., Boston 10
Antiseptol Co., 5524 Northwest Highway, Chicago
Banner Chem. Prods. Co., 60 Elm St., Newark 5
Chemical Compound Corp., 262 Huron St., Brooklyn
Chemical Mfg. & Dist. Co., Easton, Pa.
Chem. Service Co. of Balto., Howard & West Sts., Balto.
Click Chemical Co., 41 Morrell St., Brooklyn
Chicago Sanitary Prod. Co., 3100 S. Throop St., Chicago
Clifton Chem. Co., 62 William St., N. Y.
Cole Laboratories, 22-19 37th Ave., L. I. City, N. Y.
Columbia Soap & Chem. Co., Inc., 324 Leavenworth St., San Francisco
Continental Car-Na-Var Corp., Brazil, Ind.
Crystal Soap & Chem. Co., 6300 State Rd., Philadelphia
Crystal Labs, Inc., 21 W. Park Way, N. E., Pittsburgh
Davies-Young Soap Co., Dayton, O.
Dutro Co., 2155 Webster St., Alameda, Calif.
Eagle Soap Corp., Huntington, Ind.
Elkay Products Corp., 323 W. 16th St., N. Y.
Fuld Bros., 702 S. Wolfe St., Baltimore
Gaylord Chem. Co., 701 Woodswether Rd., Kansas City, Mo.



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Hysan Prods. Co., 932 W. 38th Place, Chicago
Industrial Labs., 17-19 W. Conway St., Baltimore
Jansen Soap & Chemical Co., 324 Leavenworth St., San Francisco, Calif.
Kemiko Mfg. Co., 500 Chancellor Ave., Irvington, N. J.
Klix Chem Co., 2460 Third St., San Francisco
Koppers Co., Pittsburgh 19
Midland Labs., Dubuque, Iowa
North Coast Soap & Chem. Wks., Seattle, Wash.
Paradize Products Corp., 378 Bergen Blvd., Fairview, N. J.
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Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Rochester Germicide Co., 333 Hollenbeck St., Rochester 5, N. Y.
I. Schneid, Inc., 916 Ashey St., N.W., Atlanta, Ga.
Science Industries, 609-15 Geyer Ave., St. Louis 4
Solshine Mfg. Co., 423—2nd St., Fall River, Mass.
Solvay Sales Div., Allied Chemical & Dye Corp., 40 Rector St., N. Y. 6
Trio Chem. Wks., 341 Scholes St., Bklyn.
Uncle Sam Chem. Co., 573 W. 131st St., N. Y.
U. S. Sanitary Specialties Corp., 1001 S. California Blvd., Chicago 12
Vestal, Inc., 4963 Manchester St., St. Louis 10
G. H. Wood & Co., Toronto, Canada
Woodlets, Inc., Portland, Pa.
York Chemical Co., 23 Dean St., Bklyn.

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Alan Porter Lee, Inc., 81 Miller Road, Morristown, N. J.
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago
Pfaudler Co., 89 East Ave., Rochester, N. Y.
F. J. Stokes Machine Co., 5918 Tabor Rd., Phila.
Wurster & Sanger, 5201 Kenwood Ave., Chicago

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Derris, Inc., 120 Wall St., N. Y.
Enco Chem. Corp., 441 Lexington Ave., N. Y.
Greene Trading Co., 60 Wall St., N. Y.
Hammond Paint & Chem. Co., Beacon, N. Y.
Heckathorn & Co., Richmond, Calif.
Ketoid Chem. Co., 549 W. Washington, Chicago
Miller Products Co., 1932 S. W. Water Ave., Portland, Ore.
Orbis Products Corp., 215 Pearl St., N. Y.
S. B. Penick & Co., 50 Church St., N. Y.
John Powell & Co., 1 Park Ave., N. Y.
Prentiss Drug & Chem. Co., 110 William St., N. Y.
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Stauffer Chemical Co., 420 Lexington Ave., N. Y.
U. S. Industrial Chemicals, Inc., 60 E. 42nd St., N. Y. C.
Whitmire Research Corp., 339 S. Vandeventer, St. Louis

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Fuld Bros., 702 S. Wolfe St., Baltimore
R. M. Hollingshead Corp., Camden, N. J.

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Background for better detergents

More than a billion pounds of household and industrial cleaning compounds have been produced with synthetic detergent materials made by Oronite.

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Large-scale production facilities and experience provide Oronite the background for better detergents and make Oronite a most important source of supply.

ORONITE CHEMICAL COMPANY

THE NAME TO WATCH IN CHEMICALS

A partial list of other Oronite Chemicals

NOTICE
Some of the following are currently in short supply.

Detergent Alkane
Detergent Slurry
Detergent D-40
Detergent D-60
Wetting Agents
Lubricating Oil Additives
Cresylic Acids
Gas Odorants
Polybutenes
Sodium Sulfonates
Purified Sulfonate
Naphthenic Acids
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Ortho, Para Xylenes
Xylol
Aliphatic Acid
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THESE EXTREMELY VERSATILE SYNTHETIC DETERGENTS FIND A WIDE VARIETY OF USES THROUGHOUT INDUSTRY

Four Examples:

1. FOOD AND VEGETABLE PROCESSING
A tremendous aid in washing, peeling and processing fruits and vegetables before canning or freezing. Improves their marketability and aids in the removal of dirt, insecticide and fertilizer residue.

2. UPHOLSTERING AND RUG CLEANING
These detergent products find widespread use in plant or "on-location" cleaning of rugs, carpets and upholstering. Excellent foaming qualities, easy rinsing and high efficiency in cleaning greasy type soil make them ideal for this purpose. Use them straight or in special compounds depending upon type of application.

3. CLEANING AND WASHING COMPOUNDS
Oronite supplies tremendous quantities of synthetic detergent materials to processors and compounders of packaged cleaners for all household and industrial uses.

4. TRANSPORTATION EQUIPMENT WASHING
Because of its fast action, quick rinsability and high detergency, Oronite D-40, either alone or in compounds, cuts cleaning and maintenance costs on trucks, trains, busses, passenger cars and other types of rolling stock.

ORONITE CHEMICAL COMPANY

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824 WHITNEY BLDG., NEW ORLEANS 12, LA.

DETERGENTS, ANTISEPTIC LIQUID (Contd.)

Hysan Prods. Co., 932 W. 38 Place, Chicago
Masury Young Co., 76 Roland St., Boston 29
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Piatt & Smillie Chemicals, 2329 Pine St., St. Louis 3
James Variey & Sons, 1200 Switzer Ave., St. Louis
G. H. Wood & Co., Toronto, Canada
Woodlets, Inc., Portland, Penna.

DETERGENTS (Alkali Type)

American Soap & Washoline Co., Cohoes, N. Y.
Ampion Corp., 47-02 5th St., L. I. City
Antiseptol Co., 5524 Northwest Highway, Chicago
Armour & Co., 1355 W. 31st St., Chicago
Blockson Chemical Co., Joliet, Ill.
Boston Chemical Industries, 64 E. Brookline St., Boston
Brilco Laboratories, 1553 63rd St., Brooklyn 19
Calgon, Inc., Hagan Bldg., Pittsburgh 30.
Candy & Co., 2515 W. 35th St., Chicago
Carlstadt Chem. Co., Carlstadt, N. Y.
Chemical Mfg. & Dist. Co., Easton, Pa.
Chem. Service Co. of Balto., Howard & West Sts., Balto.
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Clarkson Co., 919 N. 9 St., Phila. 23
Continental Car-Na-Var Corp., Brazil, Ind.
Cowles Chemical Co., 7016 Euclid Ave., Cleveland
Curran Corp., Lawrence, Mass.
Diamond Alkali Co., 300 Union Commerce Bldg., Cleveland 14
Diversey Corp., 53 W. Jackson Blvd., Chicago
E. F. Drew & Co., 15 E. 26th St., N. Y.
DuBois Soap Co., Cincinnati
E. I. du Pont de Nemours & Co., Wilmington, Del.
Economics Laboratory, Guardian Bldg., St. Paul
Essential Chems. Co., 744 N. 4th St., Milwaukee 3
Fuld Bros., 702 S. Wolfe St., Baltimore
Gaylord Chem. Co., 701 Woodswether Rd., Kansas City
James Good, Inc., 2116 E. Susquehanna Ave., Phila.
Hercules Powder Co., Wilmington, Del.
Higley Chemical Co., Dubuque, Iowa
Hockwald Chem. Co., 135 Mississippi St., San Francisco, Calif.
Hysan Prods. Co., 932 W. 38th Place, Chicago
Kearny Mfg. Co., Kearny, N. J.
Knoxall Corp., Indianapolis, Indiana
H. Krevit & Co., 73 Welton St., New Haven, Conn.
Los Angeles Soap Co., 617 E. 1st St., Los Angeles
A. R. Maas Chem. Co., South Gate, Calif.
Mathieson Chemical Co., 10 Light St., Balto. 18
Miranol Chemical Co., 16 Melville Pl., Irvington, N. J.
Monsanto Chemical Co., 1700 S. 2nd St., St. Louis
Murro Chem. Co., P. O. Box 185, Asheville, N. C.
National Milling & Chem. Co., 4601 Nixon St., Phila. 27
Napthole, Inc., 15 E. 26th St., N. Y.
Oil States Pet. Co., 233 Broadway, N. Y.
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Penna. Salt Mfg. Co., 1000 Widener Bldg., Phila.
Philadelphia Quartz Co., Public Ledger Bldg., Independence Sq., Phila. 6
Pittsburgh Plate Glass Co., Columbia Chemical Div., 5th & Bellefield, Pittsburgh 13
Port Huron Detergent Co., Port Huron, Mich.
Quaker Chem. Prods. Co., Conshohocken, Pa.
Refined Prods. Corp., Lyndhurst, N. J.
Rex-Cleanwall Corp., Brazil, Ind.
G. S. Robins & Co., 126 Chouteau Ave., St. Louis 2
Rulon Laboratories, Bryant Bldg., Kansas City
Rumford Chemical Wks., Rumford, R. I.
Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
Savin Products Co., 1221 Dorchester Ave., Boston 25
Skotch Prods. Corp., 2710 Detroit Ave., Cleveland
Stevens Soap Corp., 200 Sullivan St., Brooklyn, N. Y.
E. B. Snyder Labs., 2137 E. Harold St., Philadelphia
Solvay Sales Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
John T. Stanley Co., 642 W. 30th St., N. Y.
Stepan Chem. Co., 1353 N. Branch St., Chicago 22
Swift & Co., Chicago
Superior Soap Corp., 121 Nostrand Ave., Brooklyn
Thompson-Hayward Chem. Co., Kansas City 8, Mo.
Jos. Turner & Co., Ridgefield, N. J.
Ultra Chem. Wks., 2 Wood St., Paterson, N. J.
U. S. Sanitary Spec Corp., 1001 S. California Ave., Chicago 12
Virginia-Carolina Chem. Corp., Richmond, Va.
Warwick Wax Co., 10-10 44th Ave., L. I. C. 1, N. Y.
Westvaco Chem. Div., Food Machy. & Chem. Corp., 405 Lexington Ave., N. Y.
Welch, Holme & Clark Co., 439 West St., N. Y.
Wyandotte Chemicals Corp., Michigan Alkali Div., Wyandotte, Mich.

DETERGENTS, Synthetic (Compounded)

Alrose Chem. Co., Box 1294, Providence, R. I.
American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
Analab Labs., 285 Franklin St., Boston 10
Antara Prods., Div. General Dyestuffs Corp., 435 Hudson St., N. Y.
Armour & Co., 1355 W. 31st St., Chicago
Arnold, Hoffman & Co., 55 Canal St., Providence, R. I.
Atlantic Refining Co., 260 S. Broad St., Phila.
B. T. Babbitt, Inc., 386—4th Ave., N. Y. 16
Barton Chem. Co., 3907 S. Langley Ave., Chicago
Brilco Laboratories, 1553 63rd St., Brooklyn 19
Burkhart-Schier Chem. Co., Chattanooga 2, Tenn.
Carbide & Carbon Chem., 30 E. 42nd St., N. Y.
Carlstadt Chem. Co., Carlstadt, N. J.
Chem. Mfg. & Dist. Co., Easton, Pa.
Chemical Service Co. of Baltimore, Balto. 30
Clarkson Co., 919 N. 9th St., Phila. 23
Click Chemical Corp., 41 Morrell St., Brooklyn 6
Chicago San. Prod. Co., 3100 S. Throop St., Chicago 8
Clifton Chem. Co., 62 Wiliam St., N. Y.
Colgate-Palmolive-Peet Co., Jersey City, N. J.
Commercial Solvents Corp., 17 E. 42nd St., N. Y.
Cowles Chemical Co., 7016 Euclid Ave., Cleveland
Curran Corp., Lawrence, Mass.
Davies-Young Soap Co., Dayton 1, O .
E. F. Drew & Co., 15 E. 26 St., N. Y. 10
E. I. du Pont de Nemours & Co., Wilmington, Del.
Eagle Soap Corp., Huntington, Ind.
Emulsol Corp., 59 E. Madison St., Chicago
Essential Chem. Co., 744 N. 4 St., Milwaukee 3
Fairfield Labs., Inc., 417 Cleveland Ave., Plainfield, N. J.
Fine Organics, Inc., 211 E. 19th St., N. Y.
Fuld Bros., 702 S. Wolfe St., Baltimore
Gaylord Chem Co., 701 Woodswether Rd., Kansas City, Mo.
Glyco Products Co., 26 Court St., Brooklyn, N. Y.
James Good, Inc., 2116 E. Susquehanna Ave., Phila.
Griffin Chem. Co., 1000 16th St., San Francisco
Haag Laboratories, 14010 S. Seeley Ave., Blue Island, Ill.
Hercules Powder Co., Wilmington, Del.
Hewitt Soap Co., Dayton, O.
E. F. Houghton & Co., 303 W. Lehigh Ave., Phila.
Kearny Mfg. Co., Kearny, N. J.
H. Krevit & Co., 73 Welton St., New Haven, Conn.
Koppers Co., Koppers Bldg., Pittsburgh, Pa.
Lanair Chem. Corp., 236 W. North Ave., Chicago 10
Masury Young Co., 76 Roland St., Boston 29
Mathieson Chemical Co., 10 Light St., Balto. 18
Maywood Chemical Works, Maywood, N. J.
M. Michel & Co., 90 Broad St., N. Y.
Michigan Chemical Corp., St. Louis, Mich.
Midland Laboratories, Dubuque, Iowa
Miranol Chemical Co., 16 Melville Pl., Irvington, N. J.
Monsanto Chemical Co., 1700 S. 2nd St., St. Louis
Murro Chemical Co., P. O. Box 185, Asheville, N. C.
National Aniline Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Ninol Laboratories, 1719 S. Clinton St., Chicago 16
Nopco Chemical Co., Harrison, N. J.
Oil States Pet. Co., 233 Broadway, N. Y.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2
Oronite Chemical Co., 38 Sansome St., San Francisco
J. C. Paul & Co., 930 Roscoe St., Chicago 13
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Penna. Salt Mfg. Co., Widener Bldg., Phila.
Quaker Chem. Prods. Co., Conshohocken, Pa.
Refined Prods. Corp., Lyndhurst, N. J.
Rex-Cleanwall Corp., Brazil, Ind.
Richards Sales Corp., Jersey City, N. J.
Sandoz Chem. Wks., 61 Van Dam St., N. Y.
Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
Savin Products Co., 1221 Dorchester Ave., Boston 25
Sharples Chemicals, Inc., 123 S. Broad St., Phila.
Skotch Prods. Corp., 2710 Detroit Ave., Cleveland

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Solvay Sales Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Synthetic Chemicals, Inc., 335 Boulevard, Paterson 4, N. J.
Tech Soap Mfg. Co., S. Chicago Ave. & 73 St., Chicago
Trio Chemical Wks., 341 Scholes St., Bklyn. 6
Ultra Chem. Wks., 2 Wood St., Paterson, N. J.
Universal Chlorinator Co., 3418 W. Pico Blvd., Los Angeles
U. S. Sanitary Spec. Corp., 1001 S. California Ave., Chicago 12
Van Dyk & Co., Belleville, N. J.
James Varley & Sons, 1200 Switzer Ave., St. Louis
Verona Chem. Co., 26 Verona Ave., Newark, N. J.
Virginia-Carolina Chem. Corp., Richmond, Va.
G. H. Wood & Co., Toronto, Ont., Canada
Woodlets, Inc., Portland, Pa.
Welch, Holme & Clark Co., 439 West St., N. Y.
Westvaco Chem. Div., Food Machinery & Chem. Corp., 415 Lexington Ave., N. Y. 17
Wyandotte Chemicals Corp., Michigan Alkali Div., Wyandotte, Mich.

DETERGENTS, Synthetic (Basic Materials)

Alrose Chem. Co., Box 1294, Providence, R. I.
American Alcolac Corp., 3440 Fairfield Rd., Baltimore 26
American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
Antara Prods. Div., General Dyestuff Corp., 435 Hudson St., N. Y. 14
Armour & Co., 1355 W. 31 St., Chicago 9
Arnold, Hoffman & Co., 55 Canal St., Providence, R. I.
Atlantic Refining Co., 260 S. Broad St., Phila.
Atlas Powder Co., Wilmington, Del.
Bersworth Chemical Co., Framingham, Mass.
Carbide & Carbon Chemicals, 30 E. 42nd St., N. Y.
Carlstadt Chem. Co., Carlstadt, N. J.
Commercial Solvents Corp., 17 E. 42nd St., N. Y.
E. F. Drew & Co., 15 E. 26 St., N. Y. 10
E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.
Emulsol Corp., 59 E. Madison St., Chicago
Enjay Co., 15. W. 51 St., N. Y. 19
Hercules Powder Co., 929 King St., Wilmington, Del.
Kearny Mfg. Co., Kearny, N. J.
Kessler Chem. Co., State Rd., Phila. 35
Maywood Chem. Wks., Maywood, N. J.
Miranol Chemical Co., 16 Melville Pl., Irvington, N. J.
M. Michel & Co., 90 Broad St., N. Y.
Monsanto Chemical Co., 1700 S. 2nd St., St. Louis
National Aniline Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
National Milling & Chem. Co., 4601 Nixon St., Phila. 27
Ninol Laboratories, 1719 S. Clinton St., Chicago 16
Nopco Chem. Co., Harrison, N. J.
Oil States Petroleum Co., 233 Broadway, N. Y.
Onyx Oil & Chem. Co., Warren & Norris Sts., Jersey City, N. J.
Oronite Chem. Co., 38 Sansome St., San Francisco
Refined Prods. Corp., Lyndhurst, N. J.
Robinson, Wagner Co., 110 E. 42nd St., N. Y.
Rohm & Haas Co., 222 W. Washington Sq., Phila.
Sharples Chemicals, Inc., 123 S. Broad St., Phila.
Shell Chem. Corp., 50 W. 50th St., N. Y. 20
Solvay Sales Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
L. Sonneborn Sons, 300—4th Ave., N. Y.
Stepan Chem. Co., 1353 N. Branch St., Chicago 22
U. S. Industrial Chemicals, 60 E. 42 St., N. Y. 17
Ultra Chemical Wks., 2 Wood St., Paterson, N. J.
Verona Chem. Co., 26 Verona Ave., Newark, N. J.
Jacques Wolfe, Passaic, N. J.
Wyandotte Chemicals Corp., Michigan Alkali Div., Wyandotte, Mich.

DIATOMACEOUS EARTH (see Bleaching Earths)

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DIFFUSERS (Steam and Air)

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DIPHENYL OXIDE (see Aromatic Chemicals)

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Independent Specialties, 152 W. 75th St., Chicago
Masury Young Co., 76 Roland St., Boston 26
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
U. S. Sanitary Specialties Corp., 1001 S. California Ave., Chicago

DISH WASHING COMPOUNDS (see Cleaning Compounds, Dry)

DISINFECTANTS, CHLORINATED

Ampion Corp., 42-02 5th St., Long Island City, N. Y.
A-M-R Chem. Co., 985 E. 35 St., Bklyn. 18
Analab Labs., 285 Franklin St., Boston 10
Arnold, Hoffman & Co., 55 Canal St., Providence, R. I.
Banner Chem. Prods. Co., 60 Elm St., Newark, N. J.
Barton Chemical Co., 3909 S. Langley Ave., Chicago
Blockson Chem. Co., Joliet, Ill.
Chemical Compounding Corp., 262 Huron St., Brooklyn
Chem. Service Co. of Balto., Howard & West Sts., Balto.
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Churchill Mfg. Co., Galesburg, Ill.
Clifton Chemical Co., 62 William St., N. Y.
Cole Laboratories, 22-19 37th Ave., L. I. City, N. Y.
Eagle Soap Corp., Huntington, Ind.
Fuld Bros., 702 S. Wolfe St., Baltimore
Goulard & Olena, Inc., Skillman, N. J.
Heyden Chemical Corp., 393—7 Ave., N. Y. 1
Higley Chemical Co., Dubuque, Iowa
R. M. Hollingshead Corp., Camden, N. J.
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Hunt Mfg. Co., Lisbon Rd., Cleveland
Hygiene Products, 169 St. Cyr, Montreal, Can.
Hysan Products Co., 932 W. 38th Place, Chicago
John Wiley Jones Co., Caledonia, N. Y.
H. Krevit & Co., 73 Welton St., New Haven, Conn.
Mathieson Chemical Co., 10 Light St., Balto. 18
Midland Labs., Dubuque, Iowa
Monsanto Chemical Co., 1700 E. 2nd St., St. Louis
North Coast Soap & Chem. Works, Seattle, Wash.
J. C. Paul & Co., 930 Roscoe St., Chicago 13
Peck's Products Co., 610 E. Clarence Ave., St. Louis 15
Penna. Salt Mfg. Co., 1000 Widener Bldg., Phila.
Puritan Chem. Co., Atlanta, Ga.
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
G. S. Robins & Co., 126 Chouteau Ave., St. Louis 2
Rulon Laboratories, Bryant Bldg., Kansas City
Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
Sherwin-Williams Co., 601 Canal Rd., Cleveland
Tech Soap Mfg. Co., S. Chicago Ave. & 73 St., Chicago
Thompson-Hayward Chemical Co., Kansas City, Mo.
Trio Chem. Wks., 341 Scholes St., Bklyn.
U. S. Sanitary Specialties Corp., 1001 S. California Ave., Chicago 12
Universal Chlorinator Co., 3418 W. Pico Blvd., Los Angeles
Victory Chem. Co., 148 Fairmount Ave., Phila.
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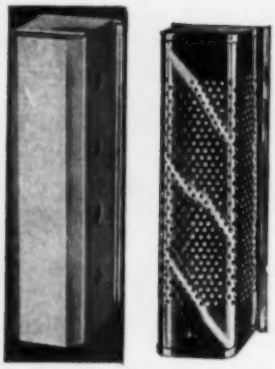

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Antiseptol Co., 5524 Northwest Highway, Chicago
Arnold, Hoffman & Co., 55 Canal St., Providence, R. I.
Baird & McGuire, Inc., Holbrook, Mass.
Boston Chemical Industries, 64 E. Brookline St., Boston
Brilco Laboratories, 1553 63rd St., Brooklyn 19
Buckingham Wax Co., Van Dam St. & Borden Ave., L. I. City, N. Y.
Burkhart-Schier Chem. Co., Chattanooga 2, Tenn.
Samuel Cabot, Inc., 141 Milk St., Boston
Chemical Compounding Corp., 262 Huron St., Brooklyn
Chemical Mfg. & Dist. Co., Easton, Pa.
Chemical Service Co., Baltimore, Md.
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Click Chemical Corp., 41 Morrell St., Brooklyn 6
Clifton Chemical Co., 62 William St., N. Y.
Cole Laboratories, 22-19 37th Ave., L. I. City, N. Y.
Continental Car-Na-Var Corp., Brazil, Ind.
Corn King Co., Cedar Rapids, Ia.
Wm. Cooper & Nephews, 1909 Clifton Ave., Chicago
Creco Co., Inc., Creco Bldg., Long Island City, N. Y.
Crosby Chemicals, Inc., De Ridder, La.
Crystal Soap & Chem. Co., 6300 State Rd., Phila.
Davies-Young Soap Co., Dayton, O.
Eagle Soap Corp., Huntington, Ind.
Elkay Products Co., 323 W. 16th St., N. Y.
Emulsol Corp., 59 E. Madison St., Chicago
Fergusson Laboratories, Drexel Bldg., Phila.
Fine Organics, Inc., 211 E. 19 St., N. Y. 3
Fuld Bros., 702 S. Wolfe St., Baltimore
Gaylord Chem. Co., 701 Woodswether Rd., Kansas City
James Good, Inc., 2116 E. Susquehanna Ave., Phila.
Haag Laboratories, Inc., 140th and Seeley Ave., Blue Island, Ill.
Harley Soap Co., Pierce & Orthodox Sts., Phila.
Higley Chem. Co., Dubuque, Iowa
R. M. Hollingshead Corp., Camden, N. J.
James Huggins & Son, 239 Medford St, Malden, Mass.
Hunt Mfg. Co., Lisbon Rd., Cleveland
Hygiene Products, 169 St. Cyr, Montreal, Can.
Hysan Products Co., 932 W. 38th Place, Chicago.
Klix Chem. Co., 2460 Third St., San Francisco
Knoxall Corp., Indianapolis, Ind.
Koppers Co., Pittsburgh 19
H. Krevit & Co., 73 Welton St., New Haven, Conn.
Lanair Chem. Corp., 236 W. North Ave., Chicago 10
Manhattan Kreole Prods., 172 N. 10th St., Brooklyn
McLaughlin, Gormley, King Co., Minneapolis
Merck & Co., Rahway, N. J.
Midland Labs., Dubuque, Iowa
National Sawdust Co., 69 N. 6th St., Bklyn.
N. Y. Soap Co., 258 Third St., Brooklyn
Oil-Kraft, Inc, 3330 Beekman St., Cincinnati
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Puritan Chem. Co., Atlanta, Ga.
Riverside Chem Co., N. Tonawanda, N. Y.
Theo. B. Robertson Prods. Co., 700 W Division St., Chicago
Rochester Germicide Co., 333 Hollenbeck St., Rochester 5, N. Y.
Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
Savin Products Co., 1221 Dorchester Ave., Boston 25
I. Schneid, Inc., 916 Ashby St., N.W., Atlanta, Ga.
Science Industries, 609-15 Geyer Ave., St. Louis
Sherwin-Williams Co., 601 Canal Rd., Cleveland, Ohio
E. B. Snyder Labs., 2137 E. Harold St., Philadelphia
Solshine Mfg. Co., 412—2nd St., Fall River, Mass.
L. Sonneborn Sons, 300—4th Ave., N. Y.
John T. Stanley Co., 642 W. 30th St., N Y
Superior Soap Corp., 121 Nostrand Ave., Brooklyn
Tech Soap Mfg. Co., S. Chicago Ave. & 73 St., Chicago
Tesco Chem. Co., P. O Box 4748, Atlanta
Thompson-Hayward Chem. Co., Kansas City 8, Mo.
Trio Chem. Wks., 34 Scholes St., Bklyn.
Tru-Pine Co., 7638 Vincennes Ave., Chicago 20
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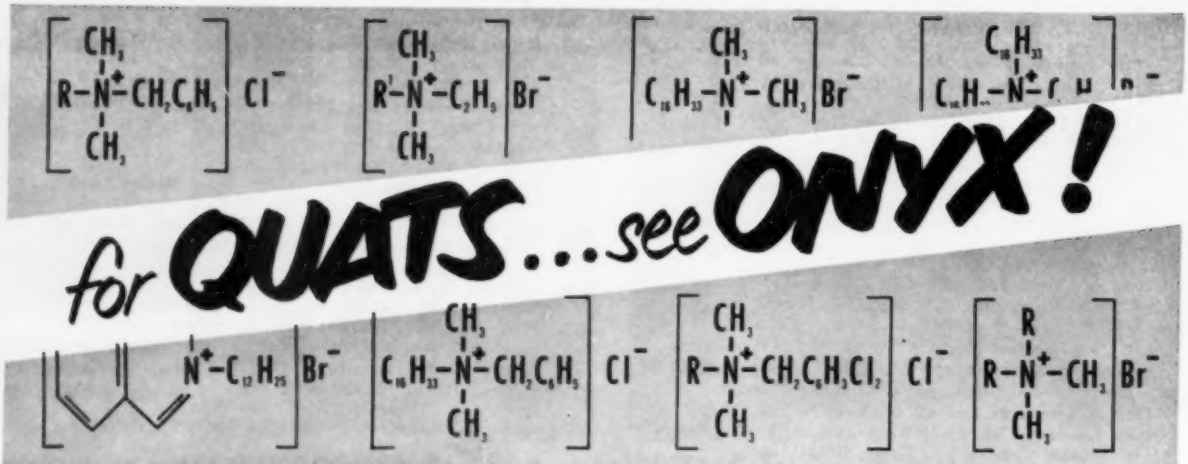

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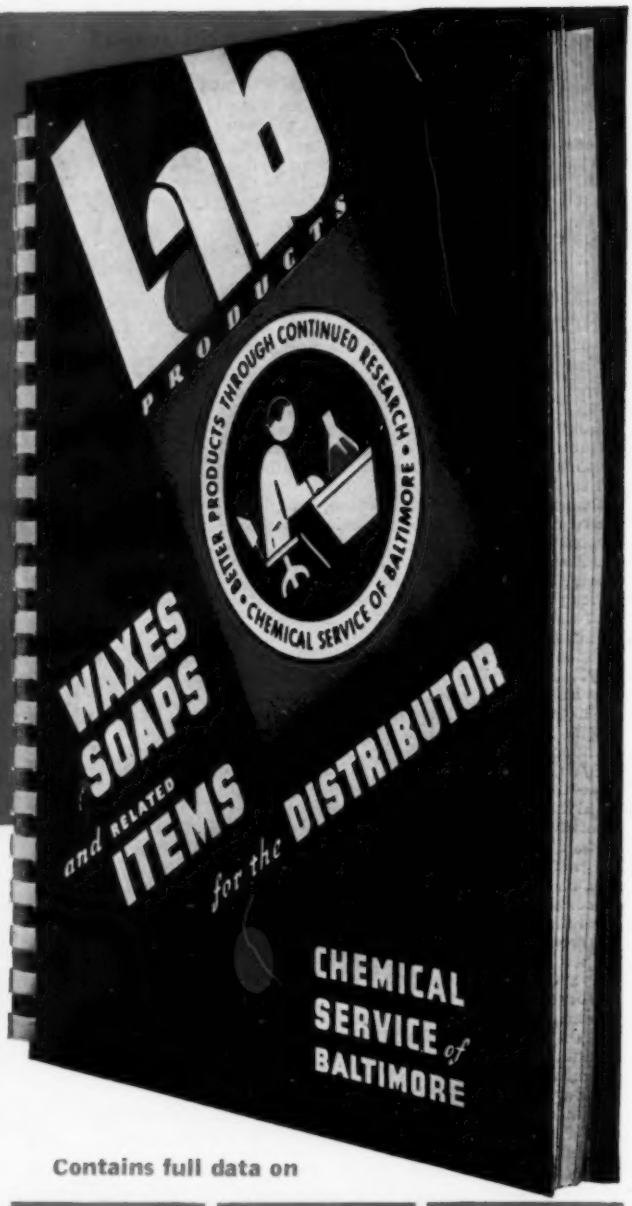

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by John W. McCutcheon

445 PAGES

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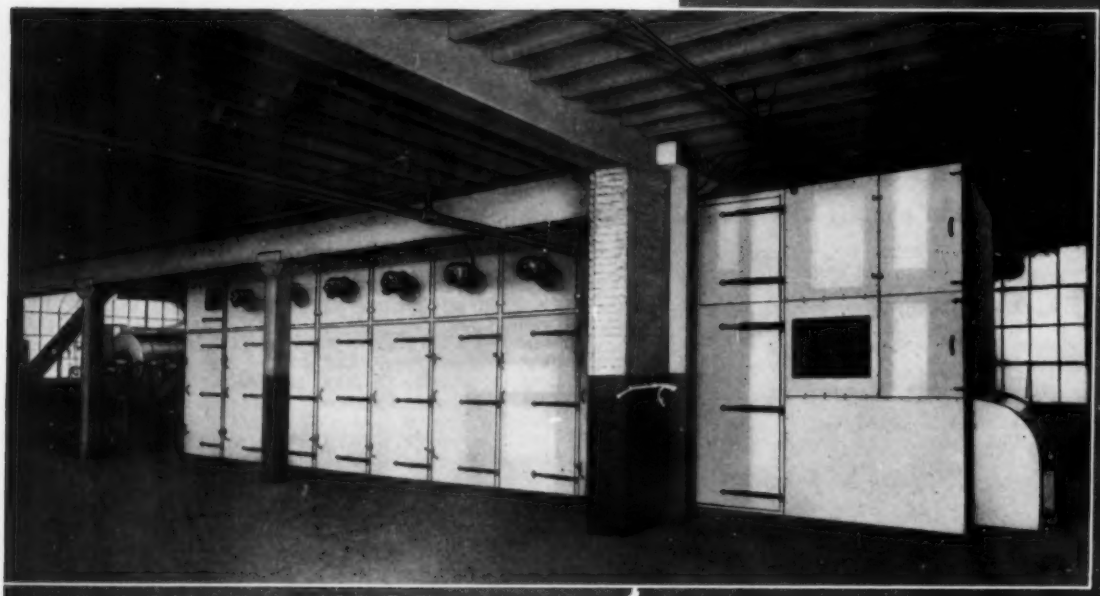

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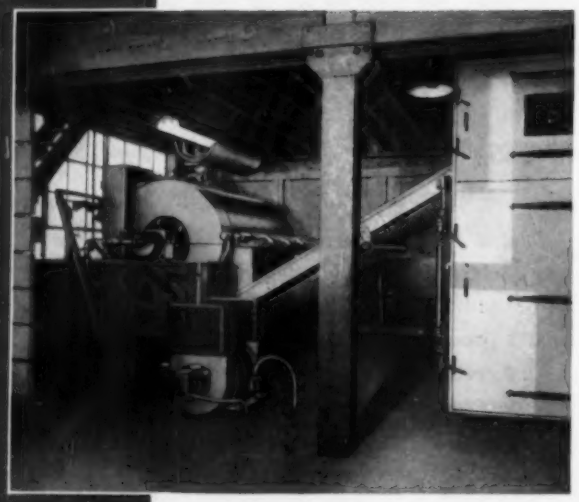

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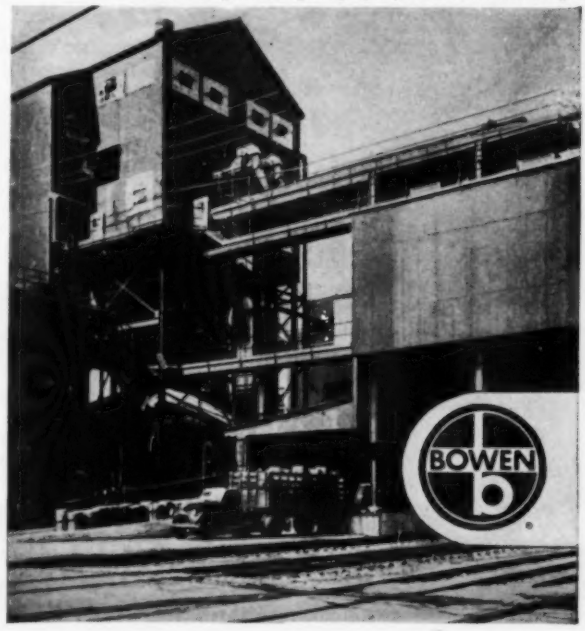

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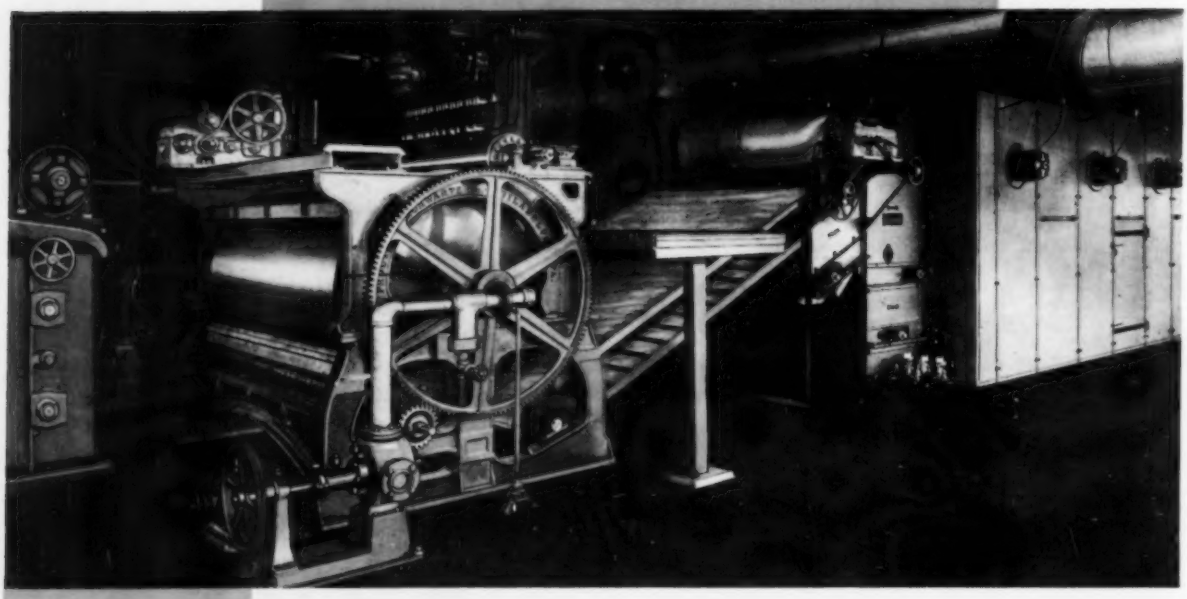

PRODUCT UNIFORMITY

Both the chilling machine and the dryer that go to make up the Proctor automatic flake soap system are engineered to assure uniformity in the finished soap. The chilling machine is precision engineered to produce ribbons that do not vary in thickness, for this is the first step toward uniform drying. Proper drying is brought about by the combination of uniform circulation of heated air and the correct drying time at the temperature to suit the character of the soap being dried.

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P. Wohl & Sons, 85 Bayard St., N. Y.

EMULSIFIER INTERMEDIATES

Atlas Powder Co., Wilmington 99, Dela.
Carbide & Carbon Chem., 30 E. 42nd St., N. Y. 17
Commercial Solvents Corp., 17 E. 42nd St., N. Y. 17
Dow Chemical Co., Midland, Mich.
E. I. du Pont de Nemours & Co., Wilmington, Dela.
Hercules Powder Co., Wilmington, Dela.
M. Michel & Co., 90 Broad St., N. Y. 4
Sharples Chemicals, Inc., 123 N. Broad St., Phila. 1

EMULSIFYING AGENTS

Alrose Chem. Co., Box 1294 Providence, R. I.
American Colloid Co., Merchandise Mart Plaza, Chicago
Antara Prods., Div. General Dyestuff Corp., 435 Hudson St., N. Y. 14
Arabol Mfg. Co., 110 E. 42nd St., N. Y.
Archer-Daniels-Midland Co., Minneapolis 2
Armour & Co., 1355 W. 31st St., Chicago
Arnold, Hoffman & Co., 55 Canal St., Providence, R. I.
Atlantic Refining Co., 260 S. Broad St., Philadelphia
Atlas Powder Co., Wilmington, Del.
Borne Scrymser Co., 632 S. Front St., Elizabeth, N. J.
Burkhart-Schier Chem. Co., Chattanooga 2, Tenn.
John H. Calo Co., 19 Rector St., N. Y. 6
Carbide & Carbon Chemicals, 30 E. 42nd St., N. Y.
Carlstadt Chem. Co., Carlstadt, N. J.
Commercial Solvents Corp., 17 E. 42nd St., N. Y.
Diamond Alkali Co., 300 Union Commerce Bldg., Cleveland 14

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El Dorado Oil Wks., 311 California St., San Francisco 4
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Emulsol Corp., 59 E. Madison St., Chicago
Enjay Co., 15 W. 51st St., N. Y. 19
Fine Organics, Inc., 211 E. 19th St., N. Y. 3
Glyco Prods. Co., 26 Court St., Bklyn. 2
R. W. Greeff & Co., 10 Rockefeller Plaza, N. Y.
Griffin Chem. Co., 1000—16th St., San Francisco
W. C. Hardesty Co., 41 E. 42nd St., N. Y.
Hercules Powder Co., Wilmington, Dela.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Kearny Mfg. Co., Kearny, N. J.
Kessler Chem. Co., 7272 State Rd., Phila.
Kraft Chemical Co., 917 W. 18th St., Chicago
Magnus, Mabee & Reynard, 16 Desbrosses St., N. Y. 13
N. I. Malmstrom & Co., 147 Lombardy St., Bklyn.
M. Michel & Co., 90 Broad St., N. Y.
Miranol Chemical Co., 16 Melville Pl., Irvington, N. J.
Maywood Chemical Works, Maywood, N. J.
Monsanto Chem. Co., 1700 S. 2nd St., St. Louis
National Southern Products, 630 5th Ave., N. Y. 20
Nopco Chemical Co., Harrison, N. J.
Ninol Laboratories, 1719 S. Clinton St., Chicago 16
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2
Oronite Chem. Co., 38 Sansome St., San Francisco
Orbis Products Corp., 215 Pearl St., N. Y.
S. B. Penick & Co., 50 Church St., N. Y.
Pennsylvania Refining Co., Butler, Pa.
Petroleum Specialties, Inc., 400 Madison Ave., N. Y.
Philadelphia Quartz Co., Public Ledger Bldg., Independence Sq., Phila. 6
Protean Chemical Corp., 150 Nassau St., N. Y. 7
Pylam Products Co., 799 Greenwich St., N. Y.
Quaker Chem. Prods. Co., Conshohocken, Pa.
Refined Products Corp., Page and Newkirk Ave., Lyndhurst, N. J.
Robinson Wagner Co., 110 E. 42nd St., N. Y.
Rohm & Haas Co., 222 W. Washington Sq., Phila.
Rumford Chemical Wks., Rumford, R. I.
Sandoz Chemical Works, Inc., 61 Van Dam St., N. Y.
Sharples Chemicals, Inc., 123 S. Broad St., Phila. 9
L. Sonneborn Sons, 300-4th Ave., N. Y.
Stanco Distributors, Inc., 216 W. 14th St., N. Y.
Synthetic Chemicals, Inc., 335 Boulevard, Paterson 4, N. J.
Thompson-Hayward Chem. Co., Kansas City 8, Mo.
Arthur C. Trask Co., 4103 S. LaSalle St., Chicago 9
Ultra Chem. Wks., 2 Wood St., Paterson, N. J.
U. S. Industrial Chems., Inc., 60 E. 42nd St., N. Y.
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Warwick Wax Co., 10-10 44th Ave., L. I. C., N. Y.
Welch, Holme & Clark Co., 439 West St., N. Y.
Woburn Chemical Corp., Harrison, N. J.
Jacques Wolfe & Co., Passaic, N. J.
Wyandotte Chemicals Corp., Michigan Alkali Div., Wyandotte, Mich.

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Allondon, Inc., 912 Broadway, New York City
Aromatic Products, Inc., 15 E. 30th St., N. Y.
Aroscent, Inc., Main & Chestnut Sts., Dobbs Ferry, N. Y.
Berje Prods. Co., 616 W. 44th St., N. Y. 18
W. J. Bush & Co., 11 E. 38th St., N. Y .
Camilli, Albert & La Loue, 14 E. 48th St., N. Y. 17
Centflor Mfg. Co., 243 W. 67th St., N. Y.
Ph. Chaleyer, Inc., 160 E. 56th St., N. Y.
Antoine Chiris Co., Inc., 119 W. 57th St., N. Y.
Compagnie Parento, Inc., Croton-on-Hudson, N. Y.
Consumers Import Co., 350 Fifth Ave., N. Y.
Crosby Chemicals, Inc., De Ridder, La.
Dodge & Olcott Inc., 180 Varick St., N. Y.
Dow Chemical Co., Bush Aromatics Div., 629 Grove St., Jersey City 2
P. R. Dreyer, Inc., 117½ W. 19th St., N. Y.
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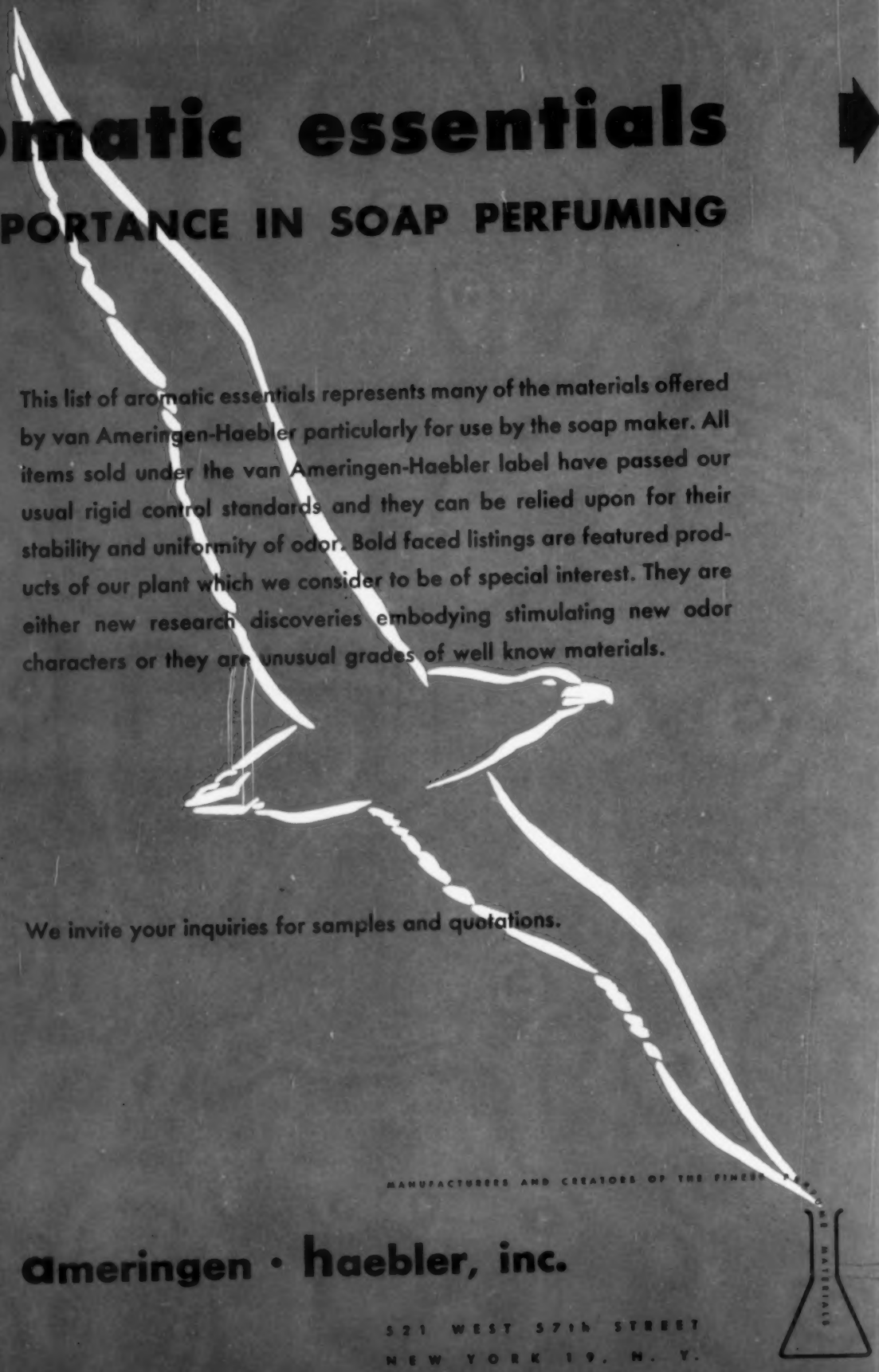

This list of aromatic essentials represents many of the materials offered by van Ameringen-Haebler particularly for use by the soap maker. All items sold under the van Ameringen-Haebler label have passed our usual rigid control standards and they can be relied upon for their stability and uniformity of odor. Bold faced listings are featured products of our plant which we consider to be of special interest. They are either new research discoveries embodying stimulating new odor characters or they are unusual grades of well know materials.

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Acetophenone

Alcohol C-8
" C-9
" C-10
" C-11
" C-12

Aldehyde C-8
" C-9
" C-11 (undecylenic)
" C-12
" C-14
" C-16 (Methyl Phenyl Ethyl Glycidate)
" C-18

Allyl Caproate

Ambrain—the concentrated heart of Labdanum, without waxes or gum.

Amyl Cinnamic Aldehyde (Flomine Coeur)

Anisic Acetate

Anisic Alcohol

Aubepine (Anisic Aldehyde)

Benzoin Coeur

Benzophenone

Benzyl Acetate

Benzyl Salicylate

Bromstyrol

Bois de Rose Terpeneless

Cedarwood Oil White

Cedrenol—Sweet, woody, rich—very lasting and stable in soap.

Cedrenyl Acetate—Lively, balsamic, sweet and lasting.

Cinnamic Alcohol

Cinnamic Aldehyde

Citral

Citronellol Coeur

Citronellyl Acetate

Citronellyl Propionate

Civetone

Coumarine

Dimethyl Benzyl Carbinol—Flowery, valuable in floral bouquets, especially lilac.

Dimethyl Benzyl Carbinyl Acetate—Rich, Roseotto note, very floral, powerful and sweet in soap.

Diphenyl Oxide

Ethyl Phenyl Acetate

Eugenol U.S.P.

Eugenol 95%

Fructone—Remarkably powerful fruit character for soap.

Galbanum Coeur

Geraniol Absolute

Geraniol C.D.

Geraniol Coeur

Geranoxide—Rosy, good in soap.

Geranyl Acetate Coeur

Geranyl Butyrate

Geranyl Propionate

Girella—Inexpensive fresh spicy character suitable for use directly in soap products.

Heliotropine

Hydratropic Acetate

Hydratropic Alcohol—Very flowery and lasting in soap.

Hydroxycitronellal

Ionone Extra C-1

Ionone Extra Pure

Ionone Alpha Coeur

Ionone Alpha Methyl

Ionone Beta

Ionone Methyl C-60

Ionone Methyl Gamma Pure—Richest of the Methyl Ionones.

Iso Butyl Phenyl Acetate

Iso Eugenol

Iso Jasmone—Very powerful jasmine body—very lasting in soap.

Iso Jasmone B—Technical grade

Jessemal—Rich Jasmine note, excellent in soap.

Labdanum Resin Absolute

Linalool B Extra

Linalool Coeur

Linalyl Acetate 90-92%

Methyl Benzoate

Methyl Cinnamate

Methyl Hexyl Ketone

Methyl Nonyl Acetaldehyde

Methyl Phenyl Acetate

Myrrh Coeur (Resin Absolute)

Nerolin

Oak Moss Absolute

Olibanum Coeur (Resin Absolute)

Opoponax Resin Absolute

Para Cresyl Acetate

Para Cresyl Phenyl Acetate

Petitgrain Absolute

Phenyl Acetaldehyde Dimethyl Acetal

Phenyl Ethyl Acetate

Phenyl Ethyl Alcohol

Phenyl Ethyl Benzoate

Phenyl Ethyl Cinnamate

Phenyl Ethyl Propionate

Phenyl Propyl Alcohol

Phenyl Propyl Propionate

Rhodinol Coeur

Rhodinol Acetate

Styrax Clarified Extra

Styrallyl Acetate

Styrallyl Alcohol

Talia—A new chemical possessing a green, leafy, powerful, violet-like character.

Terpineol

Terpinyl Acetate

Terpinyl Propionate

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Florasynth Laboratories, 5313 Olmstead Ave., N. Y. C.
Benj. French, Inc., 160—5th Ave., N. Y.
Fritzsche Brothers, Inc., 76 Ninth Ave., N. Y.
Givaudan-Delawanna, Inc., 330 W. 42nd St., N. Y.
Greene Trading Co., 70 Pine St., N. Y. (agents for foreign sellers)
Gunning & Gunning, 601 W. 26th St., N. Y.
Chas. L. Huisking & Co., 155 Varick St., N. Y.
D. W. Hutchinson & Co., 162 Front St., N. Y.
Samuel Klein, 4 Hanover Sq., N. Y. 4
E. M. Laning Co., 433 Stuyvesant Ave., Irvington, N. J.
Lautier Fils, 321 Fifth Ave., N. Y.
Pierre Lemoine, Inc., 67 Cortlandt St., N. J.
Geo. Lueders & Co., 427 Washington St., N. Y.
Magnus, Mabee & Reynard, 16 Desbrosses St., N. Y.
A. Maschmeijer, Jr., 43 W. 16th St., N. Y.
Naugatuck Aromatics, 254 4th Ave., N. Y.
Neumann-Buslee & Wolfe, 224 W. Huron St., Chicago
New York Aromatics Co., 5 Beekman St., N. Y.
Norda Essential Oil & Chem. Co., 601 W. 26th St., N. Y.
Noville Essential Oil Co., 157 Cedar St., N. Y.
Orbis Products Corp., 215 Pearl St., N. Y.
S. B. Penick & Co., 50 Church St., N. Y.
Perry Bros., Inc., 220 Flushing Ave., Brooklyn 5
Polak's Frutal Wks., 33 Sprague Ave., Middletown, N. Y.
Polak & Schwarz, Inc., 667 Washington St., N. Y.
F. Ritter & Co., 4001 Goodwin Ave., Los Angeles 39
Rosenthal-Bercow Co., 25 E. 26th St., N. Y.
Roubechez, Inc., 8 E. 12th St., N. Y. 3
Roure-Dupont, Inc., 366 Madison Ave., N. Y.
H. C. Ryland, Inc., 161 Water St., N. Y.
Schimmel & Co., 601 W. 26th St., N. Y.
Edwin Seebach Co., 912 Broadway, N. Y.
Seeley & Co., Nyack, N. Y.
Wm. G. Sibbach & Co., 210 S. 2nd Ave., Maywood, Ill.
Southwest Cedar Oil Co., P. O. Box 1939, San Antonio, Texas
Snyfleur Scientific Labs., Monticello, N. Y.
A. M. Todd Co., Kalamazoo, Mich.
Tombarel Products Corp., 12 E. 22nd St., N. Y.
Ungerer & Co., 161 Sixth Ave., N. Y.
Van Ameringen-Haebler, Inc., 521 W. 57th St., N. Y. 19
Van Dyk & Co., Belleville, N. J.
Albert Verley, Inc., 440 W. Superior St., Chicago
Verona Chem. Co., 26 Verona Ave., Newark, N. J.

ETHANOLAMINE (see Triethanolamine)

ETHERS

J. T. Baker Chem. Co., Phillipsburg, N. J.
Carbide & Carbon Chemicals, 30 E. 42nd St., N. Y.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Enjay Co., 15 W. 51st St., N. Y.
Mallinckrodt Chem. Wks., 3600 N. 2nd St., St. Louis
Merck & Co., Rahway, N. J. (also Petroleum)
Rosenthal Bercow Co., 25 E. 26th St., N. Y. 10
Shell Chem. Corp., 50 W. 50th St., N. Y. 20
U. S. Industrial Chem. Co., 60 E. 42nd St., N. Y.

ETHER, PETROLEUM (see Solvents, Petroleum)

ETHYLENE DICHLORIDE (see Solvents, Organic)

ETHYLENE GLYCOLS

American-British Chemical Supplies, 180 Madison Ave., N. Y.
Carbide & Carbon Chem., 30 E. 42nd St., N. Y. 17
Dow Chemical Co., Midland, Mich.
Jefferson Chem. Co., 30 Rockefeller Plaza, N. Y.

EUCALYPTUS OIL (see Essential Oils)

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Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
Edge Moor Iron Wks., Edge Moor, Del.
First Machy. Corp., 157 Hudson St., N. Y. (Used)
William Garrigue & Co., 9 S. Clinton St., Chicago
Houchin Machy. Co., Hawthorne, N. J.
Lancaster Iron Works, Lancaster, Pa.
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago
Pfaudler Co., Rochester, N. Y.
H. K. Porter Co., 49th & Harrison Sts., Pittsburgh
Project Fabrication Corp., 39 Broadway, N. Y. 6
F. J. Stokes Machine Co., Phila., Pa.
Struthers-Wells Corp., Warren, Pa.
Swenson Evaporator Co., Harvey, Ill.
Wurster & Sanger, 5201 S. Kenwood Ave., Chicago
Zaremba Co., 560 Crosby Bldg., Buffalo, N. Y.

FANS (Ventilating & Exhaust)

Buffalo Forge Co., 490 Broadway, Buffalo
Duriron Co., Dayton, Ohio
Garden City Fan Co., 332 S. Michigan, Chicago
General Regulator Corp., 711 W. Lake St., Chicago
Graybar Electric Co., 180 Varick St., N. Y.
H. D. Hudson Mfg. Co., 589 E. Illinois St., Chicago 11
International Engineering, 1145 Rolandry Ave., Dayton, O.
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago

FAT SPLITTING REAGENTS

Alrose Chem. Co., Box 1294, Providence, R. I.
Atlantic Refining Co., 260 S. Broad St., Philadelphia
Emery Industries, Inc., Carew Tower, Cincinnati
Griffin Chem. Co., 1000 16th St., San Francisco
W. C. Hardesty Co., 41 E. 42nd St., N. Y.
Oronite Chem. Co., 38 Sansome St., San Francisco
Pennsylvania Refining Co., Butler, Pa.
Petroleum Specialties, Inc., 400 Madison Ave., N. Y.
Sherwood Petroleum Co., Englewood, N. J.
L. Sonneborn Sons, 300—4th Ave., N. Y.
Stanco Distributors, Inc., 216 W. 14th St., N. Y.
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Armour & Co., 1355 W. 31st St., Chicago
Arnold, Hoffman & Co., Providence, R. I.
Atlas Powder Co., Wilmington, Del.
Emery Industries, Carew Tower, Cincinnati 2
El Dorado Oil Wks., 311 Cal. St., San Francisco 4 Calif.
Emulsol Corp., 59 E. Madison St., Chicago 3
General Mills, Chemical Div., Minneapolis 1
Givaudan-Delawanna, Inc., 330 W. 42nd St., N. Y. 18
Griffin Chem. Co., 1000 16th St., San Francisco
Heyden Chem. Corp., 393—7th Ave., N. Y. 1
Kessler Chemical Co., Philadelphia 35
Koppers Co., Pittsburgh 19
National Southern Products, 630 5th Ave., N. Y. 20
Nopco Chem. Co., Harrison, N. J.
Onyx Oil & Chem. Co., Warren & Norris Sts., Jersey City, N. J.
Werner G. Smith Co., 2191 W. 110th St., Cleveland 2
Arthur C. Trask Co., 4103 S. La Salle St., Chicago 9
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Woburn Chemical Corp., Kearny, N. J.

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Project Construction Corp., 39 Broadway, N. Y. 6
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(see also Brokers and Dealers)

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Celina Stearic Acid Co., Celina, Ohio
Concord Chem. Co., Moorestown, N. J.
T. G. Cooper & Co., Cedar & Venango Sts., Phila.
Darling & Co., 4201 So. Ashland Ave., Chicago
E. F. Drew & Co., 15 E. 26th St., N. Y. 10
Durkee Famous Foods, Inc., 2670 Elston Ave., Chicago
Eastern Industries, Inc., Ridgefield, N. J.
El Dorado Oil Wks., 311 California St., San Francisco
Griffin Chem. Co., 1000 16th St., San Francisco
Emery Industries Inc., 4300 Carew Tower, Cincinnati
General Mills, Chemical Div., 400 2nd Ave., Minneapolis 1
A. Gross & Co., 295 Madison Ave., N. Y.
Otto A. C. Hagen Corp., 929 Public Ledger Bldg., Phila.
Hardesty & Co., 60 E. 42 St., N. Y.
W. C. Hardesty Co., 41 E. 42nd St., N. Y.
Industrial Chem. Sales Div., West Va. Pulp & Paper Co., 230 Park Ave., N. Y.
Spencer Kellogg & Sons, Buffalo, N. Y.
Los Angeles Soap Co., Los Angeles, Calif.
N. I. Malmstrom & Co., 147 Lombardy St., Brooklyn
National Southern Products, 630 5th Ave., N. Y. 20
Newport Industries, 230 Park Ave., N. Y. 17
Procter & Gamble Co., Cincinnati, O.
J. H. Redding, Inc., 17 Battery Place, N. Y.
Robinson Wagner Co., 110 E. 42nd St., N. Y.
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
C. F. Simonin's Sons, Tioga & Belgrade St., Phila.
Werner G. Smith Co., 2191 W. 110th St., Cleveland
Southern Cotton Oil Co., Produce Exchange, N. Y.
Swift & Co., Union Stock Yards, Chicago
Theobald Industries, Kearny, N. J.
Arthur C. Trask Co., 4103 S. La Salle St., Chicago
Union Bag & Paper Corp., 233 Broadway, N. Y.
Welch, Holme & Clark Co., 439 West St., N. Y.
M. Werk Co., Bernard St., Cincinnati
G. A. Wharry & Co., 95 Broad St., N. Y. 4
Wilson-Martin Co., Swanson St., Phila.
Woburn Chemical Corp., Harrison, N. J.

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American Alcolac Corp., 3440 Fairfield Rd., Baltimore 26
Antara Prods., Div. General Dyestuffs Corp., 435 Hudson St., N. Y.
Archer-Daniels-Midland Co., Minneapolis 2
Carbide & Carbon Chemicals, 30 E. 42nd St., N. Y.
E. I. du Pont de Nemours & Co., Wilmington, Del.
W. C. Hardesty Co., 41 E. 42nd St., N. Y.
N. I. Malmstrom & Co., 147 Lombardy St., Bklyn, N. Y.
M. Michel & Co., 90 Broad St., N. Y.
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Robinson Wagner Co., 110 E. 42nd St., N. Y.
Werner G. Smith Co., 2191 W. 110th St., Cleveland
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FIBRE CANS (see Cans, Fibre)

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(See Packaging for the Trade)

FILLING MACHINERY (for Chips, Flakes)

Allied Steel & Equipt. Co., Chester, N. J.
Arenco Mach. Co., 25 W. 43rd St., N. Y. 18
Automatic Scale Co., P. O. Box 896, Joliet, Ill.
Consolidated Packaging Machy. Corp., 1400 West Ave., Buffalo
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
Exact Weight Scale Co., 944 W. 5th Ave., Columbus, O.

If you require . . .

FATTY ACIDS

PALM
TALLOW
CASTOR
COTTON
COCONUT
SOYA

DISTOLINE · HELIOLINE D
LAURIC ACID · CAPRIC ACID

WOBURN can supply you.
These base products are priced right—and can be shipped to you in any quantity needed.

If you require
SPECIAL FATTY ACIDS
Call upon Woburn's research organization. We'll be glad to help you solve your fatty acid problems.

WOBURN dependable PRODUCTS

WOBURN CHEMICAL CORP. (N. J.)
1200 HARRISON AVENUE · KEARNY, NEW JERSEY

J. L. Ferguson Co., Joliet, Ill.
First Machy. Corp., 157 Hudson St., N. Y. (Used)
Frazier & Son, 33810 Cortlandt St., Belleville, N. J.
B. F. Gump Co., 1325 S. Cicero Ave., Chicago (Bbls & Bags)
S. Howes Co., Silver Creek, N. Y. (Bbls.)
Johnson Automatic Sealer Co., Ltd., Battle Creek, Mich.
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago (Used)
Perl Machine Mfg. Co., 72 Jay St., Brooklyn 1
Pneumatic Scale Corp., North Quincy, Mass.
Geo. G. Rodgers Co., 225 W. 34th St., N. Y.
Sprout, Waldron & Co., Muncy, Pa.
Stokes & Smith Co., 4915 Summerdale Ave., Philadelphia
Stuyvesant Engineering Co., Lyndhurst, N. J.
Triangle Package Machine Co., 6633 W. Diversey Blvd., Chicago
Weigh Right Automatic Scale Co., Joliet, Ill.

FILLING MACHINERY (for Liquids, in Small Bottles, Cans, Etc.)

Allied Steel & Equipt. Co., Chester, N. J.
Alsop Engineering Corp., 103 Green St., Milldale, Conn.
Arenco Mach. Co., 25 W. 43rd St., N. Y. 18
S. F. Bowser & Co., Ft. Wayne, Ind.
Clevon Products Co., 27-31 Mechanic St., Buffalo
Consolidated Packaging Machy, Corp., 1400 West Ave., Buffalo
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
Ertel Engineering Corp., 7 Front St., Kingston, N. Y.
Filter Paper Co., 2464 S. Michigan Ave., Chicago
First Machy, Corp., 157 Hudson St., N. Y. (Used)
General Mills, Inc., 1620 Central Ave., NE, Minneapolis, Minn.
Horix Mfg. Co., Pittsburgh
Hornney & Co., 420 Lexington Ave., N. Y.
Karl Kiefer Machine Co., 919 Martin St., Cincinnati
M. R. M. Co., 191 Berry St., Bklyn.
Mandel Products, 207 Astor St., Newark, N. J.
G. Diehl Mateer & Co., Devon 1, Pa.
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago (Used)
Packer Machinery Corp., 30 Irving Pl., N. Y.
Perl Mach. Mfg. Co., 72 Jay St., Brooklyn 1
Pfaudler Co., Rochester, N. Y.
Pneumatic Scale Corp., North Quincy, Mass.
Geo. G. Rodgers Co., 225 W. 34th St., N. Y.
Scientific Filter Co., 2 Franklin Sq., N. Y. 10
F. J. Stokes Machine Co., 5918 Tabor Rd., Philadelphia
Triangle Package Machinery Co., 6633 W. Diversey Ave., Chicago 35
U. S. Bottlers Machinery Co., 4019 N. Rockwell St., Chicago
Vol-U-Meter Co., 707 Ohio St., Buffalo, N. Y.
Weigh Right Automatic Scale Co., Joliet, Ill.

FILLING MACHINERY (for Liquids in drums, carboys, large cans, etc.)

Allied Steel & Equipment Co., Chester, N. J.
Alsop Engineering Corp., 103 Green St., Milldale, Conn.
Arenco Machine Co., 25 W. 43rd St., N. Y. 18
S. F. Bowser & Co., Ft. Wayne, Ind.
Clevon Products Co., 27-31 Mechanic St., Buffalo
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
Ertel Engineering Corp., 7 Front St., Kingston, N. Y.
Filter Paper Co., 2464 S. Michigan Ave., Chicago
First Machy. Corp., 157 Hudson St., N. Y. (Used)
Hornney & Co., 420 Lexington Ave., N. Y.
Karl Kiefer Machine Co., Cincinnati
M. R. M. Co., 191 Berry St., Bklyn.
Mandel Products, 207 Astor St., Newark, N. J.
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago (Used)
Packer Machinery Corp., 30 Irving Pl., N. Y.
Geo. G. Rodgers Co., 225 W. 34th St., N. Y.
Scientific Filter Co., 2 Franklin Sq., N. Y. 10
Stein Equipment Co., 90 West St., N. Y. (Used)
U. S. Bottlers Machy. Co., 4019 N. Rockwell St., Chicago

FILLING MACHINERY (for Paste, Drums)

Allied Steel & Equipt. Co., Chester, N. J.
Arenco Mach. Co., 25 W. 43rd St., N. Y. 18
Chemical & Process Machy. Corp., 146 Grand St., N. Y.

"Simplicity" is the word for
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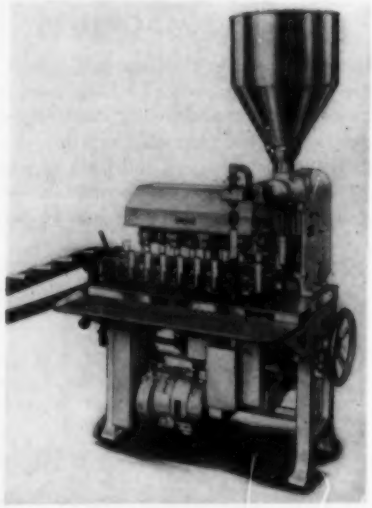
• economical • efficient
WE TAKE GREAT PRIDE IN ANNOUNCING OUR NEW FULLY AUTOMATIC LABELING MACHINES
The same simplicity of design and change-over ease so symbolic of MRM Fillers, is true of these top-performing, moderately-priced Labelers. Models for applying labels to front or front and back of any type container up to 80 per minute. Designed to operate with any make filler.
New MRM Volumetric Filling Attachment permits any vacuum filling machine to dispense precise amount for filling collapsible, glass or metal containers.
A model for every need— from 10 to 400 containers per minute
fully automatic
ROTARY
Vacuum
and Gravity
FILLERS
12 to 40 Spouts
Production capacity from 50 to 400 Glass, Tin or Plastic Containers per Minute.
Designed for quick changeover and thorough cleaning. Fills all types of foamy and still liquids — brines, vinegar, chemicals, drugs, perfume, syrups, and cosmetics. All sizes and shapes of containers.
Submit samples of your containers (filled and labeled) plus your approximate production requirements and we will supply you with detailed recommendations and quotations on the machine best suited for your needs. No obligation.
Write Dept. SB for literature on complete MRM line
mrm company, inc.
191 Berry Street, Brooklyn 11, N. Y.
Manufacturers of a complete line of fully automatic and semi-automatic filling equipment and fully automatic labeling machines.

ARENCO TUBE FILLING MACHINE

For Pastes, Creams, Lotions and Liquids



also available with
Turret Jar Filling Attachment

OUTSTANDING FEATURES ARE:

- Automatic tube cleaning and cap tightening before filling.
- Positively correct quantity in each tube.
- No tube, no fill—no material delivered from filling nozzle if tube is missing.
- Quick cleaning when changing from one material to another.
- Stainless steel or other non-corrosive metals are used in all parts contacting the materials.
- Speeds up to 55 tubes per minute — one operator.

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Filling bottles, cans or jars.
Packaging powders or flakes.
Closing, Sealing, Weighing and Check Weighing.

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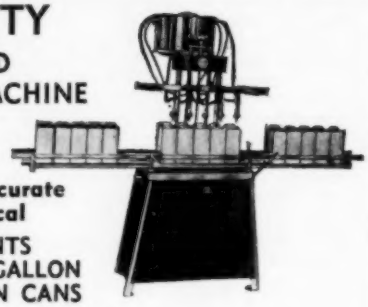
25 West 43rd Street, New York 18, N. Y.

PACKER

GRAVITY LIQUID FILLING MACHINE



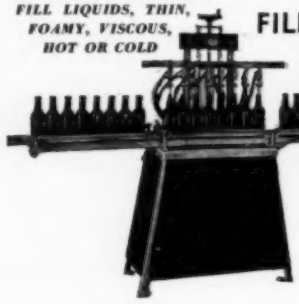
Rapid • Accurate Economical

FILLS PINTS QUARTS • GALLON and 2 GALLON CANS

UNIVERSAL VACUUM LIQUID FILLING MACHINE

ALL PACKER MACHINES FILL LIQUIDS, THIN, FOAMY, VISCOUS, HOT OR COLD

GLASS UP TO GALS. CANS UP TO QTS.

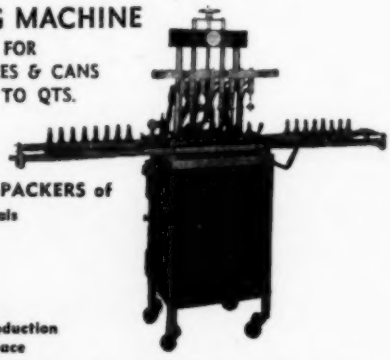


ARE AVAILABLE IN 6, 8, 10 OR 12 SPOUTS

STAINLESS STEEL or NICKEL PLATED BRASS, OR CHEMICAL RESISTANT PLASTICS

Amazing New Vacuum JUNIOR FILLING MACHINE

FOR BOTTLES & CANS UP TO QTS.



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Maximum Production in Small Space

Packer Vacuum and Gravity Liquid Filling Equipment now in successful operation in these nationally known plants:

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- **Pyrene Mfg. Corp.**
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IMMEDIATE DELIVERY — MODERATELY PRICED

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Machinery Corporation
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FILLING MACHINERY (For Pastes, Can) (Contd.)

Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
J. H. Day Co., 1144 Harrison Ave., Cincinnati
Filter Paper Co., 2464 S. Michigan Ave., Chicago
First Machy. Corp., 157 Hudson St., N. Y. (Used)
G. Diehl Mateer & Co., Devon 1, Pa.
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago (Used)
Perl Mach. Mfg. Co., 68 Jay St., Brooklyn 1
Geo. G. Rodgers Co., 225 W. 34th St., N. Y.
Stokes & Smith Co., 4915 Summerdale Ave., Phila.

FILLING MACHINERY (for Pastes, Tubes)

Allied Steel & Equipt. Co., Chester, N. J.
Arenco Mach. Co., 25 W. 43rd St., N. Y. 18
Clevon Products Co., 27-31 Mechanic St., Buffalo
Arthur Colton Co., Detroit, Mich.
Consolidated Prod. Co., 15 Park Row, N. Y. (Used)
Filter Paper Co., 2464 S. Michigan Ave., Chicago
First Machy. Corp., 157 Hudson St., N. Y. (Used)
Karl Kiefer Machine Co., 919 Martin St., Cincinnati
G. Diehl Mateer & Co., Devon 1, Pa.
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago (Used)
Perl Machine Mfg. Co., 68 Jay St., Brooklyn 1
Geo. G. Rodgers Co., 225 W. 34th St., N. Y.
Scientific Filter Co., 2 Franklin Sq., N. Y. 10
F. J. Stokes Machine Co., 5918 Tabor Rd., Philadelphia

FILLING MACHINERY (for free flowing dry products)

Allied Steel & Equipt. Co., Chester, N. J.
Arenco Mach. Co., 254 W. 43rd St., N. Y. 18
Automatic Scale Co., P. O. Box 896, Joliet, Ill.
Brown Bag Filling Machy. Co., Fitchburg, Mass.
Consolidated Package Machinery Corp., 1400 West Ave., Buffalo, N. Y.
Consolidated Prod. Co., 15 Park Row, N. Y. (Used)
J. H. Day Co., 1144 Harrison Ave., Cincinnati
Exact Weight Scale Co., Columbus, O.
J. L. Ferguson Co., Joliet, Ill.
First Machy. Corp., 157 Hudson St., N. Y. (Used)
Frazier & Son, Belleville, N. J.
B. F. Gump Co., 1325 S. Cicero Ave., Chicago
Hornney & Co., 420 Lexington Ave., N. Y.
S. Howes Co., Silver Creek, N. Y. (Bbls.)
Johnson Automatic Sealer Co., Battle Creek, Mich.
M. R. M. Co., 191 Berry St., Bklyn.
Mandel Products, 207 Astor St., Newark, N. J.
G. Diehl Mateer & Co., Devon 1, Pa.
National Acme Co., E. 131st St. & Coit Ave., Cleveland
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago (Used)
Packer Machinery Corp., 30 Irving Pl., N. Y.
Perl Machine Mfg. Co., 68 Jay St., Brooklyn 1
Pneumatic Scale Corp., North Quincy, Mass.
F. B. Redington Co., 112 S. Sangamon St., Chicago
Geo. G. Rodgers Co., 225 W. 34th St., N. Y.
Sprout, Waldron & Co., Muncy, Pa.
Scientific Filter Co., 2 Franklin Sq., N. Y. 10
F. J. Stokes Mach. Co., 5918 Tabor Rd., Philadelphia
Stokes & Smith Co., 4915 Summerdale Ave., Phila.
Stuyvesant Engineering Co., Lyndhurst, N. J.
Triangle Package Machinery Co., 6633 W. Diversey Ave., Chicago
Union Special Machine Co., Chicago
U. S. Automatic Box Mchy. Co., Roslindale, Boston. 31 Mass.
U. S. Bottlers Mchy. Co., 4019 N. Rockwell St., Chicago
Weigh Right Automatic Scale Co., Joliet, Ill.

FILLING MACHINERY (for Pastes, Cans)

Allied Steel & Equipt. Co., Chester, N. J.
Arenco Mach. Co., 25 W. 43rd St., N. Y. 18
Clevon Products Co., 27-31 Mechanic St., Buffalo
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
Filler Machine Co., 1250 E. Montgomery St., Phila.
Filter Paper Co., 2464 S. Michigan Ave., Chicago
First Machy, Corp., 157 Hudson St., N. Y. (Used)
Hornney & Co., 420 Lexington Ave., N. Y.
Karl Kiefer Machine Co., 919 Martin St., Cincinnati
G. Diehl Mateer & Co., Devon 1, Pa.

You Get More Advantages with PERL Machines

Designed and manufactured under rigid standards of engineering excellence, every PERL machine offers precision, uniformity in operation, and, so important today, durability. Nearly half a century of successful performance is your guarantee of satisfaction.

PISTON FILLING MACHINE
FOR TUBES & JARS

Now, get amazing accuracy, without air pockets or other production problems. PERL'S patented self-expanding piston and totally enclosed 3-way valve provide speed and uniform efficiency.

BOTTLE FILLING MACHINE

Here is high-speed precision with bottle capacities up to 1 gallon and speeds up to 200 bottles per minute.

Used by these famous firms:

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These precision machines also available:

- Bottle filling
- Can filling
- Ampoule filling
- Jar and tube filling and closing
- Bottle cleaning

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PERL MACHINE MFG. CO.
68 JAY STREET
BROOKLYN 1, N. Y.

FILLING MACHINERY (For Pastes, Cans) (Contd.)

Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago (Used)
Perl Mach. Mfg. Co., 68 Jay St., Brooklyn 1
Pfaudler Co., Rochester, N. Y.
Progressive Eng. Co., Torresdale, Pa.
Geo. G. Rodgers Co., 225 W. 34th St., N. Y.
Scientific Filter Co., 2 Franklin Sq., N. Y. 10
C. T. Small Mfg. Co., 1204 Ferguson Ave., St. Louis, Mo.
Stokes & Smith Co., 4915 Summerdale Ave., Phila.
F. J. Stokes Machine Co., 5918 Tabor Rd., Philadelphia
Triangle Package Machy. Co. 6633 W. Diversey Blvd. Chicago
U. S. Bottlers Machy. Co., 4019 N. Rockwell St., Chicago
Vol-U-Meter Co., 707 Ohio St., Buffalo, N. Y.
Weigh Right Automatic Scale Co., Joliet, Ill.

FILTER AIDS

American Colloid Co., Merchandise Mart Plaza, Chicago
Atlantic Refining Co., 260 Broad St., Phila.
Attapulgus Clay Co., 210 W. Washington Sq., Phila.
Carbide & Carbon Chem., 30 E. 42nd St., New York
Commercial Filters Corp., 92 Liberty St., N. Y.
Dicalite Div., 612 S. Flower St., Los Angeles
Filter Paper Co., 2464 S. Michigan Ave., Chicago
Filtrol Corp., 727 W. 7th St., Los Angeles
Industrial Chem. Sales Div., West Va. Pulp and Paper Co., 230 Park Ave., N. Y.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Johns-Manville Corp., 22 East 40th St., New York
Peerless Clay & Mineral Co., Pueblo, Colo.
Satisfaction Supply Co., 508 W. Broadway, N. Y. 12
Scientific Filter Co., 2 Franklin Sq., N. Y. 10
Westvaco Chem. Div., Food Machy. & Chem. Corp., 405 Lexington Ave., N. Y. 17
Whittaker, Clark & Daniels, 260 W. Broadway, N. Y.

FILTER CLAYS (see Clays; see Filter Aids.)

FILTER CLOTHS

Abbott Associates, 417 Park Sq. Bldg., Boston
Alsop Engineering Corp., 103 Green St., Milldale, Conn.
Cleveland Wire Cloth & Mfg. Co., 3574 E. 78th St., Cleveland
Commercial Filters Corp., 92 Liberty St., N. Y. 6
Ertel Engineering Corp., 7 Front St., Kingston, N. Y.
Filter Paper Co., 2464 S. Michigan Ave., Chicago
B. F. Gump Co., 1325 S. Cicero Ave., Chicago
Wm. E. Hooper & Sons, Juniper & Cherry Sts., Philadelphia
Hornney & Co., 420 Lexington Ave., N. Y.
Independent Filter Press Co., 189 Seventh St., Brooklyn
National Filter Cloth & Weaving Co., 220 E. 42nd St., N. Y.
Newark Wire Cloth Co., 223 Verona Ave., Newark, N. J.
Niagara Filter Corp., 3085 Main St., Buffalo, N. Y.
Oliver United Filters, Inc., 33 W. 42nd St., N. Y.
J. T. Perkins Co., 669 Kent Ave., Brooklyn
Wm. R. Perrin & Co., 349 W. 23rd St., Chicago
Satisfaction Supply Co., 508 W. Broadway, N. Y.
Scientific Filter Co., 2 Franklin Sq., N. Y. 10
T. Shriver & Co., Harrison, N. J.
D. R. Sperry & Co., Batavia, Ill.
Test Fabrics, Inc., 224 W. 35th St., N. Y.
Valley Foundry & Mach. Works, 710 H. St., Fresno 10, Calif.

FILTER PAPER

Alsop Engineering Corp., 103 Green St., Milldale, Conn.
H. Reeve Angel & Co., 7 Spruce St., N. Y.
Commercial Filters Corp., 92 Liberty St., N. Y. 6
Ertel Engineering Corp., 7 Front St., Kingston, N. Y.
Filter Paper Co., 2464 S. Michigan Ave., Chicago
General Chemical Co., 40 Rector St., N. Y.
August Giese & Son, 121 E. 24th St., N. Y.
F. R. Hormann & Co., 186 Joralemon St., Brooklyn 2
Hornney & Co., 420 Lexington Ave., N. Y.
Karl Kiefer Machine Co., Cincinnati, O.
Magnus, Mabee & Reynard, 16 Desbrosses St., N. Y. 13
Niagara Filter Corp., 3085 Main St., Buffalo, N. Y.
Palo Co., 81 Reade St., N. Y.
Scientific Filter Co., 2 Franklin Sq., N. Y. 10
T. Shriver & Co., Harrison, N. J.
Valley Foundry & Machine Works, 710 H. St., Fresno 10, Calif.

FILTER PRESSES

Alsop Engineering Corp., 103 Green St., Milldale, Conn.
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
Ertel Engineering Corp., 7 Front St., Kingston, N. Y.
Filter Paper Co., 2426 S. Mich. Ave., Chicago
First Machy. Corp., 157 Hudson St., N. Y. (Used)
F. R. Hormann & Co., 186 Joralemon St., Brooklyn 2
Hornney & Co., 420 Lexington Ave., N. Y.
Independent Filter Press Co., 189 Seventh St., Brooklyn
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago (Used)
Niagara Filter Corp., 3085 Main St., Buffalo, N. Y.
Oliver United Filters, Inc., 33 W. 42nd St., N. Y.
Wm. R. Perrin & Co., 349 W. 23rd St., Chicago
Patterson Foundry & Machine Co., East Liverpool, Ohio
Scientific Filter Co., 2 Franklin Sq., N. Y. 10
T. Shriver & Co., Harrison, N. J.
Sparkler Mfg. Co., 201 Lake St., Mundelein, Ill.
D. R. Sperry & Co., Batavia, Ill.
United Filters Corp., Hazelton, Pa.
Valley Foundry & Machine Works, 710 H St., Fresno 10, Calif.

FILTERS

Allied Steel & Equipt. Co., Chester, N. J.
Alsop Engineering Corp., 103 Green St., Milldale, Conn.
Belco Ind. Equipment Div., 51 Iowa Ave., Paterson, N. J.
S. F. Bowser & Co., 1302 E. Creighton Ave., Ft. Wayne, Ind.
Commercial Filters Corp., 92 Liberty St., N. Y. 6
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
Cuno Engineering Co., Meriden, Conn.
Ertel Engineering Corp., 7 Front St., Kingston, N. Y.
Filter Paper Co., 2464 S. Michigan Ave., Chicago
First Machy. Corp., 157 Hudson St., N. Y. (Used)
Foster Pump Wks., Inc., 54 Washington St., Brooklyn
F. R. Hormann & Co., 186 Joralemon St., Brooklyn 2
Jacob House & Sons, 52 St. Paul St., Buffalo
Karl Kiefer Machine Co., 919 Martin St., Cincinnati
Lancaster Iron Works, Lancaster, Pa.
Mixing Equipment Co., 167 Mt. Read Blvd., Rochester, N. Y.
Newman Tallow & Soap Machy. Co., 1051 W. 35 St., Chicago (Used)
Niagara Filter Corp., 3085 Main St., Buffalo, N. Y.
Oliver United Filters, Inc., 33 W. 42nd St., N. Y.
Permutit Co., 330 W. 42nd St., N. Y.
Pfahler Cleland Co., Galion, O.
Satisfaction Supply Co., 508 W. Broadway, N. Y. 12
Scientific Filter Co., 2 Franklin Sq., N. Y. 10
T. Shriver & Co., Harrison, N. J.
Sparkler Mfg. Co., 201 Lake St., Mundelein, Ill.
U. S. Bottlers Machy. Co., 4019 N. Rockwell St., Chicago
U. S. Stoneware Co., Akron, O.
Whiting Corp., Harvey, Ill.

FIRE EXTINGUISHER FLUID

A-M-R Chemical Co., 985 E. 35th St., Brooklyn 18
Analab Labs., 285 Franklin St., Boston 10
Carbide & Carbon Chem., 30 E. 42nd St., N. Y.
Chemical Service Co. of Baltimore, Howard & West Sts., Balto. 30
Cole Laboratories, 23rd St. & 7th Ave., L. I. City, N. Y.
Connecticut Chem. Research Corp., Bridgeport 5, Conn.
Crystal Soap & Chem. Co., 6300 State Rd., Philadelphia
Dow Chemical Co., Midland, Mich.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Fuld Bros., 702 S. Wolfe St., Baltimore
James Good Co., Susquehanna Ave. & Martha St., Phila.
Harshaw Chemical Co., 1945 E. 97 St., Cleveland 6
Michigan Chemical Corp., St. Louis, Mich.
Miranol Chemical Co., 16 Melville Pl., Irvington, N. J.
Prior Chem. Corp., 420 Lexington Ave., N. Y.
E. B. Snyder Labs., 2137 E. Harold St., Philadelphia
Stauffer Chem. Co., 420 Lexington Ave., N. Y.
Stepan Chem. Co., 1353 N. Branch St., Chicago 22
Thompson-Hayward Chem. Co., Kansas City 8, Mo.

FIRE EXTINGUISHER FLUID (Contd.)

Trio Chemical Wks., 341 Scholes St., Brooklyn 6
Uncle Sam Chem. Co., 575 W. 131st St., New York
Westvaco Chem. Div., Food Mach. & Chem. Corp., 405 Lexington Ave., N. Y.

FIRE-PROOFING COMPOUNDS

Alrose Chem. Co., Box 1294, Providence, R. I.
Analab Labs., 285 Franklin St., Boston 10
Antara Prods., Div. General Dyestuff Corp., 435 Hudson St., N. Y. 14
Arnold Hoffman Co., Providence, R. I.
Chem. Service Co., of Baltimore, Baltimore 30
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Croton Chem. Corp., 114 Liberty St., N. Y.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Eagle Soap Corp., Huntington, Ind.
Fuld Bros., 702 S. Wolfe St., Baltimore
Glyco Products Co., 26 Court St., Bklyn.
Hysan Prods. Co., 932 W. 38th Place, Chicago
Johns Manville Co., 22 E. 40th St., N. Y.
Monsanto Chemical Co., 1724 South Second St., St. Louis
Niacet Chemicals Corp., Niagara Falls, N. Y.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2
Per-Mo Products Co., 3604 Woodland Ave., Kansas City, Mo.
Price Fire & Water Proofing Co., Poughkeepsie, N. Y.
Protexol Corp., 32 Market St., Kenilworth, N. J.
Quaker Chem. Prods. Co., Conshohocken, Pa.
Victor Chemical Works, 141 West Jackson Bldg., Chicago

FISH OILS

(see also Brokers and Dealers)

Archer-Daniels-Midland Co., Minneapolis 2
Atlantic Products Corp., Commercial Trust Bldg., Phila.
Atlas Refinery, Lockwood St., Newark, N. J.
John H. Calo Co., 19 Rector St., N. Y. 6
Consumers Import Co., 350 Fifth Ave., N. Y.
Falk & Co., Pittsburgh
Greene Trading Co., 60 Wall St., N. Y. 5 (Agents for Foreign Sellers)
Hasselman, Seaman, de Ryss, Inc., 347 Madison Ave., N. Y. 17
Hooker Electrochemical Co., Niagara Falls, N. Y.
Murray Oil Products Co., 21 West St., N. Y.
Pacific Vegetable Oil Co., 62 Townsend St., San Francisco
J. H. Redding, Inc., 17 Battery Place, N. Y.
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Swan Finch Oil Corp., 30 Rockefeller Plaza, N. Y.
Swift & Co., Chicago 9
Arthur C. Trask Co., 4103 S. La Salle St., Chicago
Welch, Holme & Clark Co., 439 West St., N. Y.
G. A. Wharry & Co., 95 Broad St., N. Y. 4

FISH OIL SOAPS

Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Crystal Soap & Chem. Co., 6300 State Rd., Phila.
Falk & Co., Pittsburgh 30, Pa.
James Good, Inc., 2116 E. Susquehanna Ave., Phila.
R. M. Hollingshead Corp., Camden, N. J.
Nopco Chem. Co., Harrison, N. J.
Newell Gutradt Co., 350 Fremont St., San Francisco
North Coast Chem. & Soap Works, Seattle, Wash.
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Schaeffer Mfg. Co., 102 Barton St., St. Louis
Silmo Chemical Co., Vineland, N. J.
Thompson-Hayward Chem. Co., Kansas City, Mo.
Welch, Holme & Clark Co., 439 West St., N. Y.

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FLOATING SOAPS

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Colgate-Palmolive-Peet Co., Jersey City, N. J.
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SEALERS, WAXES and MAINTENANCE MATERIALS

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No-Burn Gym Finish*—The outstanding original finish for gym floors. Will not rubber burn—withstands boiling water, resists alkalies, acids, heat and cold.

Dri-Fast Seal & Finish*—The ideal speed finish for wood, linoleum and concrete floors. NOT A LACQUER. Base tung oil and phenol resins. Dries quickly—pale and long wearing.

Terrazzo Finish*—Will not discolor or darken terrazzo. Dries quickly—can be buffed for beautiful lustre. Prevents dusting.

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Water White Wood & Linoleum Finish
Lacquer Thinner
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Fed-Co Aluminum Finish
Sani-Surf Gloss White Enamel
Sani-Surf White Eggshell Enamel
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Buckingham Wax Co., 51-03 Van Dam St., L. I. City, N. Y.
Candy & Co., 2515 W. 35th St., Chicago
Chemical Compounding Corp., 262 Huron St., Bklyn.
Chemical Mfg. & Dist. Co., Easton, Pa.
Chem. Service Co. of Balto., Howard & West Sts., Balto.
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Churchill Mfg. Co., Galesburg, Ill.
Clarke Sanding Machine Co., Muskegon, Mich.
Clifton Chemical Co., 62 William St., N. Y.
Continental Car-Na-Var Corp., Brazil, Ind.
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Eagle Soap Corp., Huntington, Ind.
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Essential Chems. Co., 744 N. 4th St., Milwaukee 3
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Hysan Prods. Co., 932 W. 38th Place, Chicago
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Masury Young Co., 76 Roland St., Boston 29
Midland Labs., Dubuque, Iowa
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Peck's Products Co., 610 E. Clarence Ave., St. Louis
Rex-Cleanwall Corp., Brazil, Ind.
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Science Industries, 609-15 Geyer Ave., St. Louis
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E. B. Snyder Labs., 2137 E. Harold St., Phila. 25
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Standard Oil Co. (Ind.), 910 S. Michigan Ave., Chicago
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Twin City Shellac Co., 340 Flushing Ave., Brooklyn
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U. S. Sanitary Spec. Corp., 1001 S. California Ave., Chicago 12
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White Mop Wringer Co., Fultonville, N. Y.

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Armour & Co., 1355 W. 31st St., Chicago
Arrow Laboratories, 236 W. North Ave., Chicago
Banner Chem. Prods. Co., 60 Elm St., Newark, N. J.
Baum's Castorine Co., Rome, N. Y.
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Brilco Labs., 1553 63rd St., Bklyn, 19
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Clifton Chemical Co., 62 William St., N. Y.
Churchill Mfg. Co., Galesburg, Ill.
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Crystal Soap & Chem. Co., 6300 State Rd., Philadelphia
Davies-Young Soap Co., Dayton, O.
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Eagle Soap Corp., Huntington, Ind.
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Essential Chemicals Co., 744 N. 4th St., Milwaukee 3
Franklin Research Co., 5134 Lancaster Ave., Phila.
Fuld Bros., 702 S. Wolfe St., Baltimore
Gaylord Chem. Co., 701 Woodswether Rd., Kansas City 6, Mo.
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Hewitt Soap Co., Dayton, O.
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Hysan Prods. Co., 932 W. 38th Place, Chicago
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Multi-Clean Prods., 2277 Ford Pkwy., St. Paul
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N. Y. Soap Co., 258 Third St., Brooklyn
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Oil-Kraft, Inc., 3330 Beekman St., Cincinnati
Piatt & Smillie Chemicals, 2329 Pine St., St. Louis 3
Procter & Gamble Co., Cincinnati
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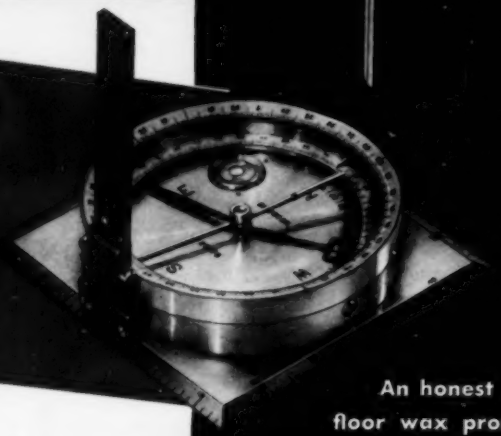
A GUIDE

TO WAX PRODUCTS PURCHASING FOR PRIVATE BRAND RESALE



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Candy's Supreme—Candy's Supreme Special AS

Candy's DeLuxe—Bright Beauty

Four floor waxes that *are* all-around top quality for any given traffic condition. Each imparts the finest protection and beauty to floors for which they are best suited.

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An outstanding material for removing even the heaviest wax film and dirt.... Brings neglected floors "back to normal." The *right* cleaning agent to insure the most efficient floor maintenance.

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A cream furniture polish that spreads easily, polishes without excessive effort and imparts a deep impressive lustre. Too, it permits *repeated repolishing* with a dry cloth saving reapplications time and again; truly a very economical polish of very highest quality.

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A paste wax that is properly blended and refined from excellent quality solids and solvents that produce the best drying time and thorough evaporation. A wax that is easy to handle, having "creamy" consistency and stability throughout its stocking and usage period.

Bright Beauty LIQUID (spirit) PREPARED WAXES

Complete line of spirit dissolved waxes that meet a wide variety of demands for durability, color and types of usages. Each its own "Dry-Cleaner," they keep a surface waxed with a superb protective coating necessary to many difficult surfaces such as certain floors (where adaptable), bars, wallpaper, etc.

Bright Beauty GLASS POLISH & CLEANER and SILVER POLISH

As a Glass Cleaner (pink color) it applies evenly with little effort, wipes off easily with negligible "powdering" and produces an undeniable "feel" of cleanness to glass that is actually true in fact. Different in color only as Silver polish, it imparts a highly desirable lustre to all silver *without* abrasion and can even correct the abuses of scratchy, "quick-polish" inferior products.

Bright Beauty DANCE FLOOR WAX

Basic advantages are freedom from "balling up," thus does not gather dirt and impregnate the floor with hard spots difficult to remove... also is free from dusty effects. Adds the protective quality to expensive ballroom floors that means more "floor-years" to users everywhere.

Bright Beauty Heavy Duty PASTE CLEANER

Really *cleans* and *scours* more effectively and quicker than most scouring powders. Depending on application, it can clean to perfection even painted walls to provide a suitable repainting surface. 100% active, free from excessive abrasive quality, it frees almost every surface from all forms of foreign matter to perfection.

1. BEAUTY AND DURABILITY

should be considered together. Initial appearance is important, but for a waxed surface to remain beautiful it must be durable. Durability depends not only on resistance to the abrasion of traffic, but even more so on resistance to the collection of dirt and to discoloring traffic marks. Durability is really measured by how long the waxed surface maintains a nice appearance before the necessity of complete removal and re-waxing.

2. ANTI SLIP

qualities are necessary in a good wax as a matter of safety underfoot. This important quality does not necessarily require the sacrifice of beauty and protection which are the foremost original reasons for the use of a wax. Look for the proper balance—a wax film which is not excessively slippery yet which is not tacky and does not excessively collect dirt.

3. WATER RESISTANCE

is important, particularly when considering the possibility of wet traffic and the necessity for frequent damp mopping for the purpose of removing surface dirt. Overdoing this quality means greater difficulty in applying multiple coats of wax and may seriously increase the difficulty in removal when complete cleaning and re-waxing is necessary. Water resistance is important, but so is the quality of removability.

4. SOLID CONTENT

when expressed in percentage is not nearly as important as the *quality* of the solid content. When considering good quality, 12% of solids answers most needs for good planned maintenance programs. Two applications of 12% will give better results than one of 18%. However the more concentrated material is useful for some programs of maintenance and particularly on "washed-out" floors, etc. Over-waxing should be avoided so that periodic complete removal will not be too difficult.

5. CARNAUBA WAX

is still the most important basic ingredient in our floor waxes. When refined and compounded with other important ingredients and "KNOW HOW" it aids materially in producing the most important features of a good floor wax... ALL AROUND QUALITY OF PERFORMANCE.

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I. Schneid, Inc., 916 Ashby St., N.W., Atlanta, Ga.
Science Industries, 609-15 Geyer Ave., St. Louis
Skotch Prods. Corp., 2710 Detroit Ave., Cleveland
E. B. Snyder Labs., 2137 E. Harold St., Philadelphia
Solshine Mfg. Co., 412—2nd St., Fall River, Mass.
S. S. Stafford, Inc., 603 Washington St., N. Y.
John T. Stanley Co., 642 W. 30th St., N. Y.
Superior Soap Corp., 121 Nostrand Ave., Brooklyn
Swift & Co., Chicago
Tech. Soap Mfg. Co., S. Chicago Ave. & 73rd St., Chicago
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Trio Chemical Wks., 341 Scholes St., Bklyn. 6
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Windsor Wax Co., 611 Newark St., Hoboken, N. J.
G. H. Wood & Co., Toronto, Ont., Canada
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Wyandotte Chemicals Corp., Michigan Alkali Div., Wyandotte, Mich.

FLOOR WAX APPLICATORS **(see Applicators)**

FLOOR WAXES

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Analab Labs., 285 Franklin St., Boston 10
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Boston Chemical Industries, 64 E. Brookline St., Boston
Breuer Electric Mfg. Co., 5100 N. Ravenswood Ave., Chicago
Buckingham Wax Corp., Van Dam St. & Borden Ave., L. I. City, N. Y.
Candy & Co., 2515 W. 35th St., Chicago
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Chemical Mfg. & Dist. Co., Easton, Pa.
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Davies-Young Soap Co., Dayton, O.
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Eagle Soap Corp., Huntington, Ind.
Empire Chemical Prods. Co., 10 Longworth St., Newark, N. J.
Essential Chems. Co., 744 N. 4th St., Milwaukee 3
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Fuld Bros., 702 S. Wolfe St., Baltimore
Gaylord Chem. Co., 701 Woodswether Rd., Kansas City 6, Mo.
James Good, Inc., 2116 Susquehanna Ave., Phila.
Harley Soap Co., Pierce & Orthodox Sts., Phila.
Higley Chemical Co., Dubuque, Iowa
R. M. Hollingshead Corp., Camden, N. J.
Hunt Mfg. Co., Lisbon Rd., Cleveland
Hygiene Products, 169 St. Cyr, Montreal, Can.
Hysan Prods. Co., 932 W. 38th Place, Chicago
S. C. Johnson & Son, 1525 Howe St., Racine, Wisc.
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GLASS POLISH

(WAX TYPE)

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DEEP TONE	
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FLOR CO FINISH	
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DEEP LUSTER WAX	(12 to 13% SOLIDS)
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DEEP LUSTER WAX No. 18	(18 to 19% SOLIDS)
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SURE STEP	(12 to 13% SOLIDS)
SURE STEP WAX No. 14	(14 to 15% SOLIDS)
SURE STEP WAX No. 18	(18 to 19% SOLIDS)
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Oil-Kraft, Inc., 3330 Beekman St., Cincinnati
J. C. Paul & Co., 930 Roscoe St., Chicago 13
Peck's Prods., 610 E. Clarence Ave., St. Louis
Perrow Chemical Co., Hurt, Va.
Puritan Chem. Co., Atlanta, Ga.
Rex-Cleanwall Corp., Brazil, Ind.
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
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Schaeffer Mfg. Co., 102 Barton St., St. Louis
I. Schneid, Inc., 916 Ashby St., Atlanta, Ga.
Science Industries, 609-15 Geyer Ave., St. Louis
Shawmut Specialty Co., 313 Centre St., Boston
Shield-All Co., 99-18 43rd Ave., Corona, N. Y.
Slick-Shine Co., 207 Astor St., Newark, N. J.
E. B. Snyder Labs., 2137 E. Harold St., Phila. 25
Solshine Mfg. Co., 412—2nd St., Fall River, Mass.
S. S. Stafford, Ind., 603 Washington St., N. Y.
John C. Stalfort & Sons, 319 W. Pratt St., Baltimore
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Standard Oil Co. (Ind.), 910 S. Michigan Ave., Chicago
H. F. Staples Co., Medford, Mass.
Superior Soap Corp., 121 Nostrand Ave., Brooklyn
Trio Chem. Wks., 341 Scholes St., Bklyn.
Twi-Laq Chemical Co., 25 N. Portland Ave., Brooklyn
Twin City Shellac Co., 340 Flushing Ave., Brooklyn
Ultra Chem. Wks., 2 Wood St., Paterson, N. J.
Uncle Sam Chem. Co., 573 W. 131st St., N. Y.
U. S. Sanitary Specialties Corp., 1001 S. California Ave., Chicago 12
Vestal, Inc., 4963 Manchester St., St. Louis 10
Victory Chem. Co., 148 Fairmount Ave., Phila.
T. F. Washburn Co., 2244 Elston Ave., Chicago
Wilco Co., 4425 Bandinni Blvd., Los Angeles
Windsor Wax Co., Inc., 611 Newark St., Hoboken, N. J.
G. H. Wood & Co., Toronto, Canada
Woodlets, Inc., Portland, Pa.
Wyandotte Chemicals Corp., J. B. Ford Div., Wyandotte, Mich.

FLUORIDES

(see also Dealers)

Aluminum Co. of America, 641 Gulf Bldg., Pittsburgh
American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
American Fluoride Corp., 151 W. 19th St., N. Y.
Blockson Chemical Co., Joliet, Ill.
Croton Chem. Corp., 114 Liberty St., N. Y.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Foote Mineral Co., 1609 Summer St., Philadelphia
General Chemical Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Harshaw Chemical Co., 1945 97th St., Cleveland
Innis, Speiden & Co., 117 Liberty St., N. Y.
Lindsay Light & Chem. Co., West Chicago, Ill.
Merck & Co., Rahway, N. J.
Penna. Salt Mfg. Co., 1000 Widener Bldg., Phila.
Pfaltz & Bauer, 350 Fifth Ave., N. Y.
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
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Welch, Holme & Clark Co., 439 West St., N. Y. 14

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Cliffs-Dow Chem. Co., Marquette, Mich.
Commercial Solvents Corp., 17 E. 42nd St., N. Y. 17
E. I. du Pont de Nemours & Co., Wilmington, Del.
Harshaw Chemical Co., 1945 E. 97 St., Cleveland 6
Heyden Chem. Co., 393 7th Ave., N. Y.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Kay-Fries Chemicals, 180 Madison Ave., N. Y. 16
Mallinckrodt Chemical Work, St. Louis, Mo.
Merck & Co., Rahway, N. J.
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Solvay Sales Div., Allied Chemicals & Dye Corp., 40 Rector St., N. Y. 6
Jos. Turner & Co., Ridgefield, N. J.

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Cenol Co., 4250 N. Pulaski Ave., Chicago
Depree Chem. Co., Holland, Mich.

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Analab Labs., 285 Franklin St., Boston 10
R. Gesell, Inc., 200 W. Houston St., N. Y.
E. B. Snyder Labs., 2137 E. Harold St., Phila. 25
Stevens Wiley Mfg. Co., Hancock, Palethrop & W. Berks Sts., Phila. 22, Pa.
U. S. Testing Co., 1415 Park Ave., Hoboken, N. J.
Wisconsin Alumni Research Foundation, P. O. Box 2059, Madison, Wisc.

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Littleford Bros., 451 E. Pearl St., Cincinnati
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FREON

Kinetic Chemicals Div., E. I. du Pont de Nemours & Co., Wilmington

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Atlantic Refining Co., 260 S. Broad St., Philadelphia
Attapulgus Clay Co., 210 W. Washington Sq., Phila.
Chas B. Chrystal Co., 53 Park Pl., N. Y.
Filtrol Corp., 727 W. 7th St., Los Angeles
Floridin Co., 200 Liberty St., Warren, Pa.
Fullers Earth Co., 2049 E. 100th St., Cleveland
Hammill & Gillespie, 225 Broadway, N. Y.
Harshaw Chemical Co., 1945 E. 97th St., Cleveland
Heckathorn & Co., Richmond, Calif.
Industrial Chem. Sales Div., West Va. Pulp & Paper Co., 230 Park Ave., N. Y.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Jas. H. Rhodes & Co., 157 W. Hubbard St., Chicago
Rosenthal Bercow, 25 E. 26th St., N. Y. 10
L. A. Salomon & Bro., 216 Pearl St., N. Y.
Sinclair Refining Co., East Chicago, Ind.
Standard Oil Co. (Ind.), 910 S. Michigan Ave., Chicago
Tamms Industries, Inc., 228 N. La Salle St., Chicago
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Whittaker, Clark & Daniels, 260 W. Broadway, N. Y.

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American-British Chem. Supplies, 180 Madison Ave., N. Y. 16
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Commercial Solvents Corp., 17 E. 42nd St., N. Y.
Dow Chemical Co., Midland, Mich.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Eston Chemicals, Inc., 3100 E. 26th St., Los Angeles
Geigy Co., 89 Barclay St., N. Y.
Heyden Chemical Corp., 393 7th Ave., N. Y. 1
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Kay-Fries Chemicals, Inc., 180 Madison Ave., N. Y.
Koppers Co., Pittsburgh 19
Michigan Chem. Corp., St. Louis, Mich.
Penn. Salt Mfg. Co., Widener Bldg., Phila.
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Stauffer Chem. Co., 420 Lexington Ave., N. Y.
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Westvaco Chem. Div., Food Machy. & Chem. Corp., 405 Lexington Ave., N. Y.
Wyandotte Chemicals Corp., Michigan Alkali Div, Wyandotte, Mich.

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Rochester Can Co., 88 Greenleaf St., Rochester, N. Y.
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Witt Cornice Co., 2118 Winchell Ave., Cincinnati

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Goggle Parts Co., 1468 W. 9th St., Cleveland
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Pulmosan Safety Equip. Corp., 644 Pacific St., Bklyn., N. Y.
Willson Products Co., 2nd & Washington St., Reading, Pa.

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General Chem. Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.

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GERANIUM OIL (see Essential Oils)

GERANYL ACETATE (see Aromatic Chemicals)

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B. T. Babbitt, Inc., 386 4th Ave., N. Y. 16
Barton Chem. Co., 3907 S. Langley Ave., Chicago
Boston Chemical Industries, 64 E. Brookline St., Boston 18
Buck-Jack Co., 3056 Federal St., Baltimore
Cadet Laboratories, 10 Clarence St., Worcester 5, Mass.
Chemical Mfg. & Dist. Co., Easton, Pa.
Chemical Service Co. of Baltimore, Howard & West Sts., Balt. 30
Churchill Mfg. Co., Galesburg, Ill.
Clifton Chemical Co., 62 William St., N. Y.
Cole Labs., 22-19—37th Ave., Long Island City
Davies-Young Soap Co., Dayton 1, O.
Essential Chems. Co., 744 N. 4th St., Milwaukee 3
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Fuld Bros., 702 S. Wolfe St., Baltimore
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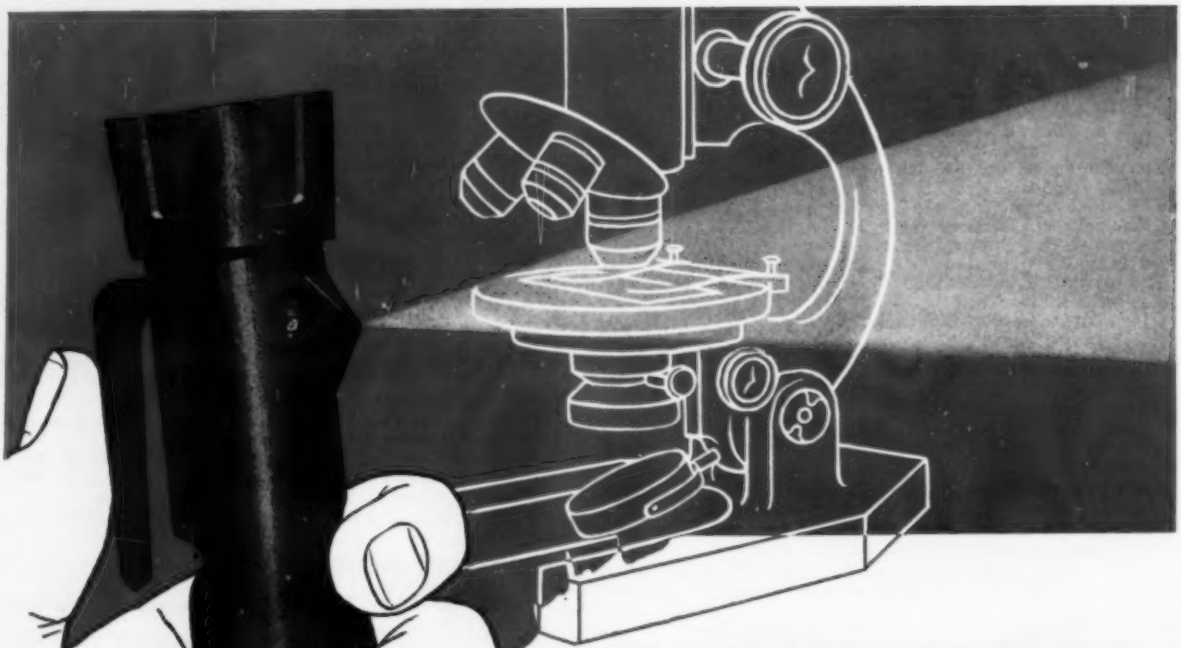

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Masury Young Co., 76 Roland St., Boston 29
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Casein Co. of America, Bainbridge, N. Y.
Darling & Co., 4201 S. Ashland, Chicago
Dennison Mfg. Co., Framingham, Mass.
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Koppers Co., Koppers Bldg., Pittsburgh, Pa.
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National Adhesives Corp., 270 Madison Ave., N. Y.
National Starch Products, Inc., 270 Madison Ave., N. Y.
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Colgate-Palmolive-Peet Co., Jersey City, N. J.
E. F. Drew & Co., 15 E. 26th St., N. Y. 10
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Hardesty & Co., 60 E. 42nd St., N. Y.
W. C. Hardesty Co., 41 E. 42nd St., N. Y.
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Shell Chemical Corp., 500 5th Ave., N. Y. 18
Swift & Co., Union Stock Yards, Chicago
Tennessee Soap Co., 1702 N. Thomas Ave., Memphis 1, Tenn.
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Allen B. Wrisley Co., 6801 West 65th St., Chicago

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Wurster & Sanger, 5201 S. Kenwood Ave., Chicago

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Carbide & Carbon Chem., 30 E. 42nd St., N. Y. 13
Carlisle Chem. Wks., 510 Reading Rd., Reading, O.
Dow Chemical Co., Midland, Mich.
Glyco Products Co., 26 Court St., Brooklyn 2
Kessler Chem. Co., State Rd. and Cottman Ave., Phila. 35
Van Dyk & Co., 11 Williams St., Belleville, N. J.

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Hysan Products Co., 932 W. 38th Place, Chicago
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Tru-Pine Co., 7638 Vincennes Ave., Chicago 20
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Murro Chem. Co., Asheville, N. C.
Hysan Prods. Co., 932 W. 38th Pl., Chicago
Oil-Dri Corp., 520 N. Michigan Ave., Chicago 11
Uncle Sam Chem. Co., 573 W. 131st St., N. Y.

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GREASES (See Tallow)

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Abbe Engineering Co., 50 Church St., N. Y.
American Pulverizer Co., 18th & Austin Sts., St. Louis
Allied Steel & Equipt. Co., Chester, N. J.
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Houchin Machy. Co., Hawthorne, N. J.
Huber Machine Co., 259 46th St., Brooklyn
International Engineering, 1145 Bolander Ave., Dayton, Ohio
Kent Machine Works, 39 Gold St., Brooklyn
Lancaster Iron Works, Lancaster, Pa.
J. M. Lehmann Co., 566 New York Ave., Lyndhurst, N. J.
Newman Tallow & Soap Mach. Co., 1051 W. 35th St., Chicago (Used)
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Raymond Pulverizer Div., 1314 N. Branch St., Chicago 22
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Sprout Waldron & Co., Muncy, Pa.
Stephens-Adamson Mfg. Co., Aurora, Ill.
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Albert Albek, Inc., 3573 Hayden Ave., Culver City, Cal.
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Consumers Import. Co., 350 Fifth Ave., N. Y.
T. G. Cooper & Co., Cedar & Venango Sts., Philadelphia
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Magnus, Mabee & Reynard, 16 Desbrosses St., N. Y. 13
National Starch Products, Inc., 270 Madison Ave., N. Y.
Onyx Oil & Chem. Co., Warren & Norris Sts., Jersey City 2, N. J.
Orbis Products Corp., 215 Pearl St., N. Y.
S. B. Penick & Co., 50 Church St., N. Y.
Prentiss Drug & Chem. Co., 110 William St., N. Y.
J. H. Redding, Inc., 17 Battery Place, N. Y.
R. F. Revson Co., 144 W. 18th St., N. Y.
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
William H. Scheel, Inc., 38 Franklin St., Bklyn.
Stein Hall & Co., 285 Madison Ave., N. Y.
Thurston & Braidich, 286 Spring St., N. Y.
Arthur C. Trask Co., 4102 S. La Salle St., Chicago
U. S. Industrial Chemicals, Inc., Lincoln Bldg., N. Y.
Welch, Holme & Clark Co., 439 West St., N. Y.
G. A. Wharry & Co., 95 Broad St., N. Y. 4
Jacques Wolfe, Passaic, N. J.

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Amer. Cyanamid Co., 30 Rockefeller Plaza, N. Y.
Gillespie-Rogers-Pyatt, Ltd., 75 West St., N. Y.
O. G. Innes Corp., 82 Wall St., N. Y.
Geo. H. Lincks, 312 Bridge St., Brooklyn 1
S. B. Penick & Co., 50 Church St., N. Y. C.
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U. S. Industrial Chemicals, Inc., Lincoln Bldg., N. Y.

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Chicago Sanitary Prod. Co., 3100 S. Throop St., Chicago 8
Clarkson Co., 919 N. 9 St., Phila. 23
Davies-Young Soap Co., Dayton 1, O.
Essential Chems. Co., 744 N. 4th St., Milwaukee 3
Fuld Bros., 702 S. Wolfe St., Baltimore 3
Hygiene Products, 169 St. Cyr, Montreal, Can.
Hysan Prods. Co., 923 W. 38th Pl., Chicago
Knoxall Corp., 1005 E. Sumner Ave., Indianapolis, Ind.
Murro Chemical Co., P. O. Box 185, Ashevile, N. C.
Onyx Oil & Chem. Co., Warren & Morris Sts., Jersey City 2
J. C. Paul & Co., 930 Roscoe St., Chicago 13
Royal Soap & Chem. Co., 3486 Union Pacific Ave., Los Angeles 23
I. Schneid, Inc., 916 Ashby St., Atlanta, Ga.
Science Industries, 609-15 Geyer Ave., St. Louis
E. B. Snyder Labs., 2137 E. Harold St., Phila. 25
Sugar Beet Prods. Co., Saginaw, Mich.

Superior Chem. Prods., 47 N. Second St., Phila. 6
Trio Chemical Wks., 341 Scholes St., Brooklyn 6

HAND SOAP, LIQUID (see Liquid Soaps)

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Antiseptol Co., 5524 Northwest Highway, Chicago
Armour & Co., 1355 W. 31st St., Chicago
Baums Castorine Co., 200 Mathew St., Rome, N. Y.
Boston Chemical Industries, 64 E. Brookline St., Boston 18
Buck-Jack Co., 3056 Federal St., Baltimore
Cadet Laboratories, 10 Clarence St., Worcester 5, Mass.
Chem. Mfg. & Dist. Co., Easton, Pa.
Chem. Service Co. of Balto., Howard & West Sts., Balto.
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Churchill Mfg. Co., Galesburg, Ill.
Clarkson Co., 919 N. 9 St., Phila. 23
Colgate-Palmolive-Peet Co., Jersey City, N. J.
Columbia Soap & Chem. Co., Inc., 324 Leavenworth St., San Francisco
Crystal Soap & Chem. Co., 6300 State Rd., Philadelphia
Cudahy Packing Co., 221 N. La Salle St., Chicago
Davies Young Soap Co., Dayton, O.
Eagle Soap Corp., Huntington, Ind.
J. Eavenson & Sons, Del. & Penn Sts., Camden, N. J.
Essential Chemicals Co., 744 N. 4th St., Milwaukee 3
Fuld Bros., 702 S. Wolfe St., Baltimore
Gaylord Chem. Co., 701 Woodswether Rd., Kansas City
Higley Chem. Co., Dubuque
R. M. Hollingshead Co., Camden, N. J.
Hygiene Products, 169 St. Cyr, Montreal, Can.
Hysan Prods. Co., 932 W. 38th Place, Chicago
Insto Co., 110 Center St., Los Angeles
J. Chemical Works, 602 W. 37th St., N. Y.
Jansen Soap & Chemical Co., 324 Leavenworth St., San Francisco, Cal.
Kearny Mfg. Co., Kearny, N. J.
Knoxall Corp., 1005 E. Sumner Ave., Indianapolis, Ind.
Lanair Chem. Corp., 236 W. North Ave., Chicago 10
Lorenz Chem. Co., 135 N. 32nd Ave., Omaha
Los Angeles Soap Co., 617 E. First St., Los Angeles
Luxury Soap Co., 165 Augusta St., Irvington, N. J.
Mione Mfg. Co., Collingdale, Pa.
Murro Chemical Co., P. O. Box 185, Asheville, N. C.
National Sanitary Prods. Co., 217 N. 2nd St., St. Louis
North Coast Soap & Chem. Wks., Seattle, Wash.
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Procter & Gamble Co., Cincinnati
Puritan Chem. Co., Atlanta, Ga.
Puritan Soap Co., 573 Lyell Ave., Rochester, N. Y.
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Royal Soap & Chem. Co., 3486 Union Pacific Ave., Los Angeles 23
Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
Schmidt Soap Products Co., 236 W. North Ave., Chicago
Science Industries, 609-15 Geyer Ave., St. Louis
Skotch Prods. Corp., 2710 Detroit Ave., Cleveland
E. B. Snyder Labs., 2137 E. Harold St., Phila. 25
Stepan Chem. Co., 1353 N. Branch St., Chicago 22
John T. Stanley Co., 642 W. 30th St., N. Y.
Sugar Beet Prods. Co., Saginaw, Mich.
Superior Soap Corp., 121 Nostrand Ave., Brooklyn
Swift & Co., Chicago
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Trio Chem. Wks., 341 Scholes St., Bklyn.
Tru-Pine Co., 7638 Vincennes Ave., Chicago 20
United Cleanser Mfg. Co., Cambridge, Mass.
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Vliet Soap Co., 638 Monroe St., Brooklyn
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Analab Labs., 285 Franklin St., Boston 10
Armour & Co., 1355 W. 31st St., Chicago
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Baums Castorine Co., 200 Mathew St., Rome, N. Y.
Boston Chemical Industries, 64 E. Brookline St., Boston
Chemical Mfg. & Dist. Co., Easton, Pa.
Chem. Service Co. of Balto., Howard & West Sts., Balto.
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Churchill Mfg. Co., Galesburg, Ill.
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Crystal Soap & Chem. Co., 6300 State Rd., Phila.
E. F. Drew Co., 15 E. 26th St., N. Y. 10
Eagle Soap Corp., Huntington, Ind.
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Essential Chemicals, 744 N. 4th St., Milwaukee
Fuld Bros. 702 S. Wolfe St., Baltimore
Gaylord Chem. Co., 701 Woodswether Rd., Kansas City,
Hygiene Products, 169 St. Cyr, Canada
Hysan Prods. Co., 932 W. 38th Place, Chicago
Insto Co., 110 Center St., Los Angeles
Lanair Chem. Corp., 236 W. North Ave., Chicago 10
Midland Laboratories, Dubuque, Iowa
M. & H. Laboratories, 2705 Archer Ave., Chicago
Murro Chemical Co., P. O. Box 185, Asheville, N. C.
National Milling & Chem. Co., 4601 Nixon St., Phila. 27
Packwood Mfg. Co., St. Louis
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Plunkett Chemical Co., 3500 S. Morgan Ave., Chicago 9
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Procter & Gamble Co., Cincinnati
Puritan Chem. Co., Atlanta
Puritan Co., 573 Lyell Ave., Rochester, N. Y.
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Rochester Germicide Co., 333 Hollenbeck St., Rochester 5, N. Y.
Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
Skotch Prods. Corp., 2710 Detroit Ave., Cleveland
E. B. Snyder Labs., 2137 E. Harold St., Philadelphia
John T. Stanley Co., 642 W. 30th St., N. Y.
Sugar Beet Prods. Co., Saginaw, Mich.
Superior Soap Corp., 121 Nostrand Ave., Brooklyn
Swift & Co., Chicago
Tech Soap Mfg. Co., S. Chicago Ave. & 73rd St., Chicago
Trio Chem. Wks., 341 Scholes St., Bklyn.
U. S. Sanitary Specialties Corp., 1001 S. California Ave., Chicago 12
Utility Co., 636 W. 44th St., N. Y.
Warren Soap Mfg. Co., Cambridge, Mass.
G. H. Wood & Co., Toronto, Canada
Woodlets, Inc., Portland, Pa.
Allen B. Wrisley Co., 6801 W. 65th St., Chicago

HARD WATER SOAPS (Salt Water Soaps)

Armour Soap Wks., 1355 W. 31st St., Chicago
Baum's Castorine Co., Rome, N. Y.
Carlstadt Chem. Co., Carlstadt, N. J.
Chemical Service Co. of Baltimore, Howard & West Sts., Balt. 30
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
James Counts Soap Co., 2nd & Washington Aves., St. Louis
Cudahy Packing Co., 221 N. LaSalle St., Chicago
Essential Chemicals Co., 744 N. 4th St., Milwaukee 3
James Good, Inc., 2116 Susquehanna Ave., Phila.
Harley Soap Co., Pierce & Orthodox Sts., Phila., Pa.
Haskins Bros. & Co., Omaha, Neb.
Hewitt Soap Co., Dayton, Ohio
Higley Chemical Co., Dubuque, Iowa
Jansen Soap & Chemical Co., 324 Leavenworth St., San Francisco, Calif.
Los Angeles Soap Co., Los Angeles, Calif.
National Soap Co., 357 South 25th St., Tacoma, Wash.
Newell Gutradt Co., 350 Fremont St., San Francisco, Cal.
North Coast Soap & Chem. Works, Seattle, Wash.
Peck's Prod. Co., 610 E. Clarence Ave., St. Louis
Procter & Gamble Co., Cincinnati
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Schmidt Soap Products Co., 236 W. North Ave., Chicago
John T. Stanley Co., 642 W. 30th St., N. Y.
Swift & Co., Union Stock Yards, Chicago
Vliet Soap Co., 638 Monroe St., Brooklyn
Warren Soap Mfg. Co., Cambridge, Mass.
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Science Industries, 609-15 Geyer Ave., St. Louis.
John T. Stanley Co., Inc., 642 W. 30th St., N. Y.
Thompson Hayward Chem. Co., Des Moines, Iowa
Trio Chemical Wks., 341 Scholes St., Bklyn. 6
Washine-National-Sands, Inc., 37-02 Northern Blvd., Long Island City

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A-M-R Chem. Co., 985 E. 35th St., Bklyn. 18
Analab Labs., 285 Franklin St., Boston 10
An-Fo Mfg. Co., 3129 Elmwood Ave., Oakland, Cal.
Antiseptol Co., 5524 Northwest Highway, Chicago
Baird & McGuire, Inc., Holbrook, Mass.
Banner Chemical Co., 60 Elm St., Newark, N. J.
Baums Castorine Co., 200 Mathew St., Rome, N. Y.
Boston Chemical Industries, 64 E. Brookline St., Boston
Brilco Labs., 1553-63rd St., Brooklyn
Cenol Co., 4250 N. Pulaski Ave., Chicago
Chemical Compounding Corp., 262 Huron St., Brooklyn
Chemical Mfg. & Dist. Co., Easton, Pa.
Chemical Service Co., Baltimore
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
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Clifton Chemical Co., 62 William St., N. Y.
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Virginia-Carolina Chem. Corp., Richmond, Va.
Vliet & Co., 638 Monroe St., Brooklyn
Robert C. White Co., Chestnut Hill, Phila.
Wilco Co., 4425 Bandinni Blvd., Los Angeles
Whitmire Research Labs., 339 S. Vandeventer. St. Louis
Windsor Wax Co., 611 Newark St., Hoboken, N. J.
G. H. Wood & Co., Toronto, Ont., Canada
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Chem. Mfg. & Dist. Co., Easton, Pa.
Chemical Service Co., Baltimore 30, Md.
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
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Whitmire Res. Labs., 339 S. Vandeventer, St. Louis
Wilkil Company, 1174 S. La Brea Ave., Los Angeles
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E. F. Drew & Co., 15 E. 26th St., N. Y. 10
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Emery Industries, 4300 Carew Tower, Cincinnati
A. Gross & Co., 295 Madison Ave., N. Y. 17
W. C. Hardesty Co., Inc., 41 E. 42nd St., N. Y.
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Spencer Kellogg & Sons, Buffalo, N. Y.
Procter & Gamble Co., Cincinnati, O.
Werner G. Smith Co., 2191 W. 110th St., Cleveland
Swift & Co., Chicago 9
Welch, Holme & Clark Co., 439 West St., N. Y.
Wesson Oil & Snowdrift Co., 21 West St., N. Y.
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Hercules Powder Co., Wilmington, Dela.

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American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
Dow Chemical Co., Midland, Mich.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Monsanto Chem. Co., 1700 S. 2nd St., St. Louis
Rohm & Haas Co., Inc., 222 W. Washington Sq., Phila.
Royce Chem. Co., Carlton Hill, N. J.
Welch, Holme & Clark Co., 439 West St., N. Y.

HYDROXYCITRONELLAL (see Aromatic Chemicals)

HYPOCHLORITES (see Chlorine) (see Laundry Bleach)

INFUSORIAL EARTH (see Abrasives)

INSECT POWDER (see Pyrethrum)

INSECT POWDER GUNS (see Blowers)

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Analab Laboratories, 285 Franklin Rd., Boston 10
Carbide & Carbon Chems., 30 E. 42nd St., N. Y.
Dow Chemical Co., Midland, Mich.
Fairfield Labs., Inc., 417 Cleveland Ave., Plainfield, N. J.
Fuld Bros., Inc., 702 S. Wolfe St., Baltimore
General Chem. Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y. 6
Gunning & Gunning, Inc., 601 W. 26th St., N. Y. 1
Heckathorn & Co., Richmond, Calif.
Hercules Powder Co., Wilmington 99, Dela.
Hygiene Products, 169 St. Cyr, Montreal, Can.
Innis, Speiden & Co., 117 Liberty St., N. Y. 6
Kessler Chem. Co., 7272 State Rd., Phila.
Koppers Co., Pittsburgh 19
Michigan Chem. Corp., St. Louis, Mich.
Midland Laboratories, Dubuque, Iowa
Monsanto Chemical Co., St. Louis 4
Puro Co., 2801 Locust St., St. Louis
Skol Co., 250 E. 43rd St., N. Y.
St. Lawrence Chem. Co., Ogdensburg, N. Y.
Ultra Chem. Wks., 2 Wood St., Paterson, N. J.
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Chipman Chem. Co., Bound Brook, N. J.
Chem. Corp. of Colorado, 12th & Quiras, Denver
Commercial Solvents Corp., 17 E. 42nd St., N. Y. 17
Dow Chemical Co., Midland, Mich.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Eston Chems., Inc., 3100 E. 26th St., Los Angeles
Fairfield Labs., 417 Cleveland Ave., Plainfield, N. J.
General Chem. Div., Allied Chemical & Dye Corp., 40 Rector St., N. Y. 6
Geigy & Co., 89 Barclay St., N. Y.
Heckathorn & Co., Richmond, Calif.
Hercules Powder Co., Wilmington, Del.
Julius Hyman & Co., Denver, Colo.
Kay-Fries Chemicals, 180 Madison Ave., N. Y. 16
Kolker Chem. Wks., 80 Lister Ave., Newark, N. J.
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Michigan Chemical Corp., St. Louis, Mich.
Midland Laboratories, Dubuque, Iowa
Miller Prods. Co., 1932 S.W. Water Ave., Portland, Ore.
Penna. Salt Mfg. Co., Widener Bldg., Phila.
S. B. Penick & Co., 50 Church St., N. Y. 7
Pittsburgh Agricultural Chem. Co., 350 Fifth Ave., N. Y.
John Powell & Co., 1 Park Ave., N. Y.
Prentiss Drug & Chem. Co., 110 William St., N. Y.
Rohm & Haas, Inc., 222 W. Washington Sq., Phila.
U. S. Industrial Chemicals, Inc., 60 E. 42nd St., N. Y.
Velsicol Corp., 330 E. Grand Ave., Chicago
Virginia-Carolina Chem. Corp., Richmond 8, Va.
Westvaco Chem. Div., Food Machy. & Chem. Corp., 405 Lexington Ave., N. Y.
Whitmire Research Corp., 339 E. Vandeventer, St. Louis

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Givaudan-Delawanna, Inc., 330 W. 42nd St., N. Y.
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Geo. Lueders & Co., 427 Washington St., N. Y. C.
Lautier Fils, Inc., 158 W. 18th St., N. Y. C.
Magnus, Mabee & Reynard, Inc., 16 Desbrosses St N. Y.
Naugatuck Aromatics, 254 Fourth Ave., N. Y.
New York Aromatics Co., 5 Beekman St., N. Y.
Norda Essential Oil & Chem. Co., 601 W. 26th St., N. Y.
Orbis Products Corp., 215 Pearl St., N. Y.
S. B. Penick & Co., 50 Church St., N. Y. 7
Perry Bros., Inc., 220 Flushing Ave., Brooklyn
Schimmel & Co., 601 W. 26th St., N. Y.
Synfleur Scientific Labs., Monticello, N. Y.
Syntomatic Corp., 114 E. 32nd St., N. Y.
Tombarel Prods. Corp., 12 E. 22nd St., N. Y.
van Ameringen-Haebler, Inc., 521 W. 57th St., N. Y. 19
Van Dyk & Co., Belleville, N. J.
Verona Chem. Co., 25 Verona Ave., Newark, N. J.

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Buffalo Meter Co., 2890 Main St., Buffalo, N. Y.
Cambridge Instrument Co., 3732 Grand Cent. Term., N. Y.
G. M. Davis Regulator Co., 2541 S. Washtenaw, Chicago
Eimer & Amend, 633 Greenwich St., N. Y.
Foxboro Co., Foxboro, Mass.
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Pneumercator Co., Sperry Bldg., Brooklyn
Precision Thermometer Co., 1434 Brandywine St., Phila.
Republic Flow Meters Co., 2240 Diversey Blvd., Chicago
W. A. Taylor & Co., 7300 York Rd., Baltimore
Taylor Instrument Co., Rochester, N. Y.
U. S. Testing Co., 1415 Park Ave., Hoboken, N. J.

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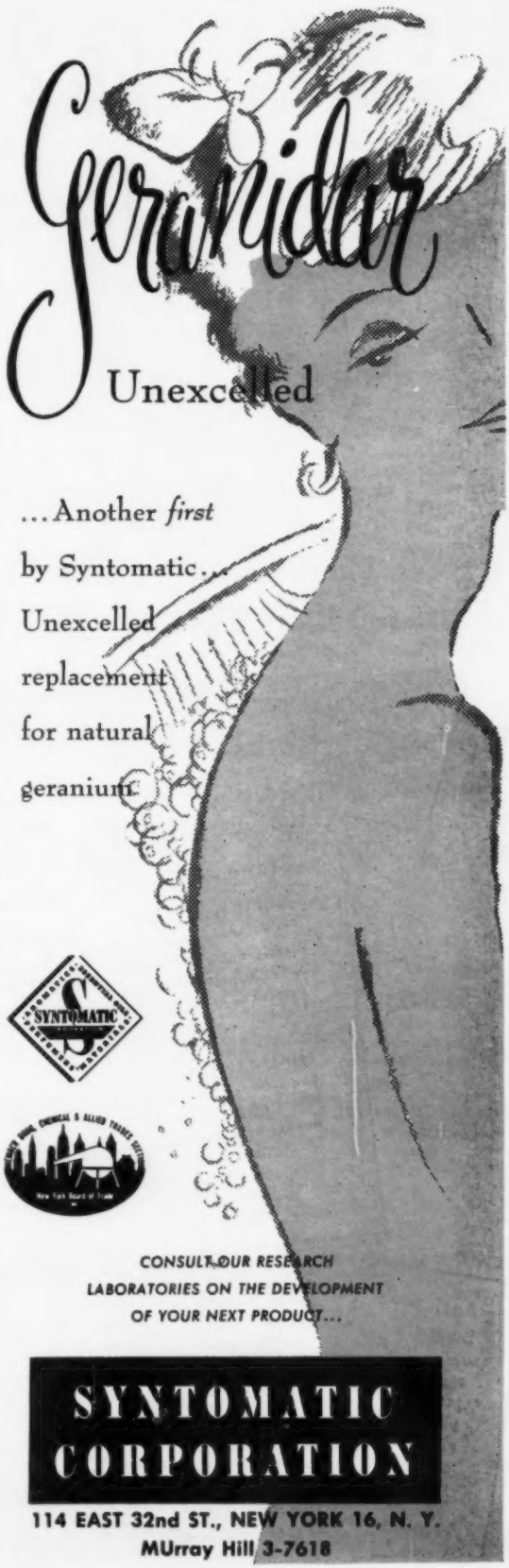
KEROSENE (see Petroleum Insecticide Base Oils)



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Armour has a complete line of quality soaps and detergents for every cleaning job.

Maintenance

Floors (wood, cork linoleum, rubber, terrazzo, marble, asphalt, mastic or ceramic tile).
Required: a neutral soap or synthetic.
Armour Recommends: Hospital Green Soap—a neutral potash soft soap made from pure, vegetable oil stock or Regal Synthetic Detergent.

Windows and Mirrors
Required: a synthetic that will remove surface oil film without scratching or marring.
Armour Recommends: Regal Synthetic — an alkyl-aryl sulfonate, an anionic surface-active agent with high wetting and detergent properties, also Energetic, a liquid synthetic detergent —or Triumph, a built non-ionic synthetic.

Maintenance

Floors (concrete, tile).
Required: a heavy-duty synthetic or soap.
Armour Recommends: Triumph Synthetic Detergent or Liquid Scrub Soap—a neutral potash saponified vegetable oil soap in convenient, ready-to-use liquid form.

Walls (Painted metal, wood, brick, concrete, plaster, marble, wood fiber board, terra cotta, stippled plaster, etc.)
Required: a neutral soft soap or synthetic.
Armour Recommends: Lustro, a neutral paste soap with a vegetable base, also Regal, Triumph, or X. L. Synthetic Detergents.

Laundry

Wools and Delicate Fabrics
Required: a pure soap which produces quick suds, rinses freely and easily at low temperatures required for washing delicate fabrics.
Armour Recommends: Royal Flakes, neutral soap containing a minimum of 88% anhydrous soap, titer from 36-38°C.

Colors
Required: a soap with a medium or low titer, effective in safe, low temperatures.
Armour Recommends: Hilo, a built soap, medium titer, with high soap content.

Kitchen

Dishes and glasses
Required: for best results, a quick-sudsing pure soap or neutral synthetic.
Armour Recommends: Regal Synthetic, Royal Flakes.

Pots and Pans
Required: fast-working synthetic detergent that leaves no greasy scum.
Armour Recommends: using X. L. Synthetic Detergent, a ready-built alkyl-aryl sulfonate which is free rinsing, leaving no soap film on utensils.

Laundry

Whitework (sheets, towels, linens, etc.)
Required: a quickly penetrating, high-titer soap which stays active even under high whitework temperature.
Armour Recommends: Flint, a neutral soap containing a minimum of 88% anhydrous soap, titer of 41-42°. Where a ready-built soap is preferred, use Giant Powder—a built product with high soap content and a 41-42° titer.

Antiseptic Soaps*

Dial, the first bar soap to guarantee all-over protection, contains famous AT-7 (Hexachlorophene) and is non-irritating, rich-lathering.
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S. Blickman, Inc., 72 Gregory Ave., Weehawken, N. J.
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
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Industrial Process Engineers, 8 Lister Ave., Newark 5, N. J.
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Patterson-Kelley Co., East Stroudsburg, Pa.
Perry Equipment Corp., 1519 W. Thompson St., Phila. (Used)
Pfaudler Co., 89 East Ave., Rochester, N. Y.
H. K. Porter Co., 49th & Harrison Sts., Pittsburgh
Project Fabrication Corp., 39 Broadway, N. Y. 6
Read Machy. Div., York, Pa.
Geo. G. Rodgers Co., 225 W. 34th St., N. Y.
Chas. Ross & Son Co., 148 Classon Ave., Brooklyn 5
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Economic Machinery Corp., Worcester, Mass.
Edward Ermold Co., 652-64 Hudson St., N. Y.
Filter Paper Co., 2464 S. Michigan Ave., Chicago
First Machy. Corp., 157 Hudson St., N. Y. (Used)
Hornney & Co, 420 Lexington Ave., N. Y.
Mandel Products, 207 Astor St., Newark, N. J.
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Potdevin Machine Co., 1256 38th St., Bklyn.
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Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
Filter Paper Co., 2426 S. Michigan Ave., Chicago
Newman Tallow & Soap Mach. Co., 1051 W. 35th St., Chicago (Used)
New Jersey Machine Corp., Hoboken, N. J.
Pneumatic Scale Corp., North Quincy, Mass.
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Scientific Filter Co., 22 Franklin Square, N. Y. 10
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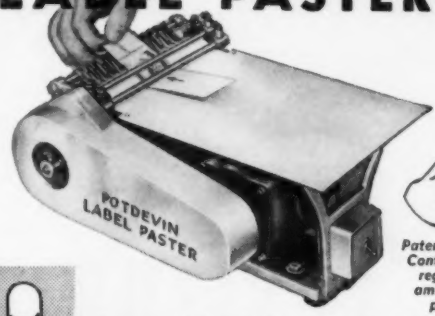

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Hochstadter Laboratories, Inc., 128 Water St., N. Y.
Illinois Chemical Labs., Gridley, Ill.
James Laboratories, 189 W. Madison St., Chicago
La Wall & Harrison, 214 S. 12th St., Phila.
Lederer Bacterological Labs., 269 S. 19th St., Phila.
Harold A. Levey Laboratories, Oleander & Dublin Sts. New Orleans
J. W. McCutcheon, 475 Fifth Ave., N. Y.
Molnar Laboratories, 211 E. 19th St., N. Y.
Rosoff Laboratories, 60th & Osage, Phila.
Samuel P. Sadtler & Son, 210 S. 13th St., Phila.
Paul H. Scrutchfield, 1237 Church St., Hannibal, Mo.
Seil, Putt & Rusby, 16 E. 34th St., N. Y.
Skinner & Sherman, 246 Stuart St., Boston
Foster D. Snell, 29 W. 15th St., N. Y.
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Stillwell & Gladding, 130 Cedar St., N. Y.
United States Testing Co., 1415 Park Ave., Hoboken, N. J.
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Breeding & Lab. Inst., 619 Kent Ave., Brooklyn

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Harry W. Dietert Co., 9330 Roselawn Ave., Detroit (device for determining moisture content)
Eastern Engineering Co., 45 Fox St., New Haven, Conn.
Eimer & Amend, 633 Greenwich St., N. Y.
Fisher Scientific Co., Pittsburgh
Emil Greiner Co., 161—6th Ave., N. Y.
Laboratory Construction Co., 111 Holmes St., Kansas City, Mo.
J. M. Lehmann Co., 566 New York Ave., Lyndhurst, N. J. (mills and plodders)
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General Chemical Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Harshaw Chemical Co., 1945 E. 97th St., Cleveland
Mallinckrodt Chemical Works, 3600 N. 2nd St., St. Louis
Merck & Co., Rahway, N. J.

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American Lanolin Corp., Lawrence, Mass.
Bopf-Whittam Corp., Linden, N. J.
Botany Worsted Mills, Passaic, N. J.
Frank G. Fanning Co., 50 E. 42nd St., N. Y.
R. W. Greeff & Co., 10 Rockefeller Plaza, N. Y.
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*NIMCO POWDERED LANOLIN SOAP

TYPICAL ANALYSIS (WHEN PACKED)

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Lanomal Soap #1 is a prepared free flowing powdered product manufactured by blending 25% of Bentonite with 75% of "Lanolin Soap", with the following typical analysis:		Moisture	1%
Moisture	2.5%	Unsaponifiables (Lanolin Alcohols)	5%
Unsap. (Lanolin Alcohols)	34.0%	Sodium Soap	94%
Sodium Soap	63.5%	Combined Sodium Oxide	11%
Combined Sodium Oxide	7.8%	Saponified Lanolin Fatty Acids	83%
Saponified Lanolin Fatty Acids	55.7%	Free Alkali	None
Free Alkali	None	Ph. of 5% aqueous solution	9.5—10.0
Ph. of 5% aqueous solution	9.5—10.0		

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Pfaltz & Bauer, Inc., 350—5th Ave., N. Y.
Robinson-Wagner Co., 110 E. 42nd St., N. Y.
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Arthur C. Trask Co., 4103 S. LaSalle St., Chicago
Welch, Holme & Clark Co., 439 West St., N. Y.

LAUNDRY BLEACH (Sodium Hypochlorite)

American Soap & Washoline Co., Cohoes, N. Y.
A-M-R Chemical Co., 985 E. 35th St., Brooklyn 18
Chemical Mfg. & Dist. Co., Easton, Pa.
Chrisman Supply Co., Fayetteville, N. Y.
Cowles Chemical Co., 7016 Euclid Ave., Cleveland
Delta Chemical Mfg. Co., 2101 Washington Blvd., Baltimore
Gaylord Chem. Co., 701 Woodswether Rd., Kansas City
Higley Chemical Co., Dubuque, Iowa
Hysan Products Co., 932 W. 38th Place, Chicago
H. Kohnstamm & Co., 91 Park Pl., N. Y.
Legrand Bleach Corp., 111—49th St., Brooklyn
Lorenz Chem. Co., 135 No. 32nd Ave., Omaha
Mathieson Chemical Corp., 10 Light St., Balto. 18
Monsanto Chemical Co., 1700 S. 2nd St., St. Louis
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Penna. Salt Mfg. Co., 1000 Widener Bldg., Phila.
Pittsburgh Plate Glass Co., Columbia Chemical Div. 5th & Bellefield, Pittsburgh 13
Rosenthal Bercow, 25 E. 26th St., N. Y. 10
E. B. Snyder Labs., 2137 E. Harold St., Phila. 25
Surpass Chemical Co., Albany, N. Y.
Thompson-Hayward Chemical Co., Kansas City, Mo.
Jos. Turner & Co., Ridgefield, N. J.
Westvaco Chem. Div., Food Machy. & Chem. Corp., 405 Lexington Ave., N. Y.
Washine-National-Sands, Inc., 37-02 Northern Blvd., Long Island City

LAUNDRY BLUING

Calco Chemical Division, Bound Brook, N. J.
Cowles Chemical Co., 7016 Euclid Ave., Cleveland
E. F. Drew Co., 15 E. 26th St., N. Y. 10
Fezandie & Sperrle, 205 Fulton St., N. Y.
General Dyestuff Corp., 435 Hudson St., N. Y.
H. Kohnstamm & Co., 91 Park Pl., N. Y.
National Aniline Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Penna. Salt Mfg. Co., 1000 Widener Bldg., Phila.
Pylam Products Co., 799 Greenwich St., N. Y.
E. B. Snyder Labs., 2137 E. Harold St., Phila. 25
Washine-National-Sands, Inc., 37-02 Northern Blvd., Long Island City
Welch, Holme & Clark Co., 439 West St., N. Y.

LAUNDRY SOAP, CAKE

Albany Soap Corp., 46 Delaware Ave., Albany 3, N. Y.
American Soap & Washoline Co., Cohoes, N. Y.
Armour Soap Wks., 1355 W. 31st St., Chicago
Beach Soap Co., Lawrence, Mass.
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago 8
Colgate-Palmolive-Peet Co., Jersey City, N. J.
Cudahy Packing Co., 221 N. La Salle St., Chicago
E. F. Drew Co., 15 E. 26th St., N. Y. 10
Du Bois Soap Co., Cincinnati, O.
J. Eavenson & Sons, Del. & Penn Sts., Camden, N. J.
Fels & Co., Philadelphia
Hewitt Soap Co., Dayton, O.
Lightfoot Schultz Co., 1412 Park Ave., Hoboken, N. J.
Long Island Soap Co., Meeker Ave., & Bridgewater St., Brooklyn
Los Angeles Soap Co., Los Angeles, Calif.
Manhattan Soap Co., Bristol, Pa.
National Soap Co., 357 S. 25th St., Tacoma, Wash.
Newell Gutradt Co., 350 Fremont St., San Francisco, Cal.
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Vliet Soap Co., 638 Monroe St., Brooklyn, N. Y.
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Beach Soap Co., Lawrence, Mass.
Chem. Mfg. & Dist. Co., Easton, Pa.
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago 8
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E. F. Drew Co., 15 E. 26th St., N. Y. 10
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Chicago Sanitary Prods., 3100 S. Throop St., Chicago 8
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Hewitt Soap Co., Dayton, Ohio
Hygiene Products, 169 St. Cyr, Montreal, Canada
Los Angeles Soap Co., Los Angeles, Calif.
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National Milling & Chem. Co., 4601 Nixon St., Phila. 27
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North Coast Soap & Chem. Wks., Seattle, Wash.
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Port Huron Detergent Co., Port Huron, Mich.
Procter & Gamble Co., Cincinnati
Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
Skotch Prods. Corp., 2710 Detroit Ave., Cleveland
John Stanley Co., 642 W. 30th St., N. Y.
Stevens Soap Corp., 202 Sullivan St., Brooklyn
Swift & Co., Union Stock Yards, Chicago
Tennessee Soap Co., 1702 N. Thomas Ave., Memphis 1, Tenn.
Warren Soap Mfg. Co., 51 Waverly St., Cambridge, Mass.
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Chemical Mfg. & Dist. Co., Easton, Pa.
Croton Chem. Corp., 114 Liberty St., N. Y.
E. F. Drew Co., 15 E. 26th St., N. Y. 10
General Chem. Div., Allied Chem. & Dye Corp. 40 Rector St., N. Y.
Harshaw Chemical Co., 1945 E. 97th St., Cleveland
Hummel Chem. Co., 90 West St., N. Y.
Innis, Speiden & Co., 117 Liberty St. N Y.
H. Kohnstamm & Co., 91 Park Pl. N Y
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Penna. Salt Mfg. Co., 1000 Widener Bldg., Phila.
Port Huron Detergent Co., Port Huron, Mich.
G. S. Robins, 126 Chouteau Ave., St. Louis 2
Rosenthal Bercow Co., 25 E. 26th St. N Y
Standard Chem. Co., Columbus, O
John T. Stanley Co., 642 W 30th St. N Y C.
Henry Sundheimer, Inc. 102 Park Ave. N Y
Thompson-Hayward Chemical Co., Kansas City, Mo.
Victor Chemical Wks., 141 W. Jackson Blvd., Chicago
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E. F. Drew & Co., 15 E. 26th St., N. Y. 10
El Dorado Oil Wks., 311 California St., San Francisco
General Mills, Chem. Div., 400 S. 2nd Ave., Minneapolis 1
Griffin Chem. Co., 100 16th St., San Francisco, Calif.
A. Gross & Co., 295 Madison Ave., N. Y. 17
W. C. Hardesty Co., 41 E. 42nd St., N. Y.
Robinson Wagner Co., 110 E. 42nd St., N. Y.
Arthur C. Trask Co., 4103 S. LaSalle St., Chicago 9
Welch, Holme & Clark Co., 439 West St., N. Y. 14
Werner G. Smith Co., 2191 W. 110th St., Cleveland 2
Woburn Chemical Corp., Harrison, N. J.

LAURYL ALCOHOL

E. I. du Pont de Nemours & Co., Wilmington, Del.
Givaudan-Delawanna, Inc., 330 W. 42nd St., N. Y. C.
M. Michel & Co., 95 Broad St., N. Y.
F. Ritter & Co., 4641 Hollywood Blvd., Los Angeles 27
Robinson Wagner Co., 110 E. 42nd St., N. Y.
Werner G. Smith Co., 2191 W. 110th St., Cleveland 2

LEAD ARSENATE

Amer. Agricultural Chem. Co., 50 Church St., N. Y.
American Cyanamid Co., 30 Reckefeller Plaza, N. Y.
California Spray-Chemical Corp., Lucas & Ortho Way, Richmond, Calif.
Chipman Chem. Co., Bound Brook, N. J.
Dow Chemical Co., Midland, Mich.
E. I. du Pont de Nemours, & Co., Inc., Wilmington, Del.
Geigy Co., 89 Barclay St., N. Y.
General Chemical Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Heckathorn & Co., Richmond, Calif.

Special Report
on One of the World's Most Useful Insecticides

ORTHO Lindane*

*Approved name for the "pure Gamma isomer" of Benzene Hexachloride, a most versatile insecticide.

Effective Multi-Purpose Uses of ORTHO Lindane:

For household pests — Kills insects three ways; by contact, vapor action and stomach poisoning. Effective control of flies, mosquitoes, lice, roaches, silverfish, bed bugs, ants, clothes moths, carpet beetles, spiders, etc. *ORTHO* Lindane in combination with DDT, Pentachlorophenol, other chlorophenols and petroleum oils gives effective termite control.

For farming and ranching — Controls flies and other insects in dairy barns — external animal parasites — mange mites, lice and ticks on sheep, cattle, hogs and horses — scab and sarcoptic mange.

For crop pest control — *ORTHO* Lindane is being widely used in control of many crop pests and with unprecedented success for the control of wireworms and other soil insects by seed treatment—also controls food and grain storage insect pests.

Check These ORTHO Lindane Advantages:

High Safety Factor — Approved by the USDA for lice and mange control on dairy cattle. Shows no contamination in milk when properly applied. Kills poultry insects by contact and does not taint eggs or meat when properly applied. Even used by dermatologists for human itch, lice and scabies. Not cumulative and practically odorless. Any taken in by a warm-blooded animal is eliminated.

Small Amounts Needed for Good Control—Only 1 to 2 lbs of *ORTHO* Lindane required, where up to 20 lbs. of DDT or Methoxychlor would be necessary.

The Story of ORTHO Lindane

This product was developed after years of *ORTHO* research. After its discovery, the makers of *ORTHO* products made hundreds of tests with "pure Gamma isomer" formulae. In July, 1949, the United States Department of Agriculture approved and named the 99% "pure Gamma isomer" Lindane. The name Lindane cannot be used for material not meeting all the properties specified for this chemical. Anyone who claims his product contains Lindane must see that it meets these very high purity standards. The name Lindane cannot be applied to low purity BHC. *ORTHO* Lindane in technical form (99%) is available from California Spray-Chemical Corporation. It is a white, granular, free-flowing material easily handled and readily subject to wettable powder, dust, and liquid formulations.

Specify ORTHO Lindane

Write for free informative booklet containing full information and technical data on the many uses of *ORTHO* Lindane. Address a card or letter to: California Spray-Chemical Corp., P.O. Box 129, Maryland Heights (St. Louis) Missouri.

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RICHMOND, CALIF.

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LEAD ARSENATE (Contd.)

Miller Prods. Co., 1932 S. W. Water Ave., Portland, Ore.
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Sherwin-Williams Co., Cleveland, O.

LECITHIN

American Lecithin Corp., Corona Ave., Elmhurst, L. I.
Archer-Daniels-Midland Co., Minneapolis 2
Chemical Novelties Corp., 946 W. 5th St., Cincinnati
W. A. Cleary Corp., New Brunswick, N. J.
Digestive Ferments Co., 930 Henry St., Detroit
Enco Co., 441 Lexington Ave., N. Y.
R. W. Greeff & Co., 10 Rockefeller Plaza, N. Y.
Merck & Co., Rahway, N. J.
Ross & Rowe, Inc., 50 Broadway, N. Y.
Robinson Wagner Co., 110 E. 42nd St., N. Y.
Soya Corp. of America, 36 Rockefeller Plaza, N. Y.
Welch, Holme & Clark Co., 439 West St., N. Y.
Wilson Labs., 4221 S. Western Blvd., Chicago

LEMON OIL, LEMONGRASS OIL (see Essential Oils)

LIME (Live and Hydrated)

Aluminum Co. of America, Gulf Bldg., Pittsburgh
California Spray-Chemical Corp., Lucas & Ortho Way, Richmond, Calif.
John H. Calo Co., 19 Rector St., N. Y. 6
Chas. B. Chrystal Co., 53 Park Pl., N. Y. 7
Dow Chemical Co., Midland, Mich.
E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.
Harshaw Chemical Co., 1945 E. 97th St., Cleveland 6
Hoosac Valley Lime Co., Adams, Mass.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Lehigh Lime Co., 111 W. Washington St., Chicago
National Gypsum Co., 192 Delaware Ave., Buffalo, N. Y.
Penna. Salt Mfg. Co., Widener Bldg., Phila. 7
Rockland-Rockport Lime Co., Rockland, Maine
Thompson-Hayward Chem. Co., Kansas City 8, Mo.
U. S. Lime Prods. Corp., 85 Second St., San Francisco
Whiterock Quarries, Inc., Bellefonte, Pa.
Whittaker, Clark & Daniels, Inc., 260 Bway., N. Y.
Witco Chemical Co., 295 Madison Ave., N. Y.

LIME SULFUR

Allen Co., Pittstown, N. J.
California Spray-Chemical Corp., Lucas & Ortho Way, Richmond, Calif.
Chipman Chemical Co., Bound Brook, N. J.
Dow Chemical Co., Midland, Mich.
E. I. du Pont de Nemours & Co., Wilmington, Del.
General Chemical Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Heckathorn & Co., Richmond, Calif.
Miller Prods. Co., 1932 S. W. Water Ave., Portland, Ore.
Taylor Chem. Wks., Aberdeen, N. C.

LINDANE (Benzene Hexachloride, 99% gamma isomer)

California Spray-Chemical Corp., Lucas & Ortho Way, Richmond, Calif.
Commercial Solvents Corp., 17 W. 42nd St., N. Y.
Ethyl Corp., 100 Park Ave., N. Y.
Hooker Electrochemical Co., Niagara Falls, N. Y.
Kolker Chem. Works, 80 Lister Ave., Newark, N. J.
Penn. Salt Mfg. Co., 1000 Widener Bldg., Phila.
Pittsburgh Agric. Chem. Co., 350 5th Ave., N. Y.
Stauffer Chem. Co., 420 Lexington Ave., N. Y.
Westvaco Chem. Div., 405 Lexington Ave., N. Y.

LINALOE OIL (see Essential Oils)

LINALOOL (see Aromatic Chemicals)

LINALYL ACETATE (see Aromatic Chemicals)

LINERS (see Bag Liners)

LINING MACHINERY (Cartons)

R. A. Jones & Co., Covington, Ky.
Newman Tallow & Soap Mach. Co., 1051 W. 35th St., Chicago
Pneumatic Scale Corp., North Quincy, Mass.
F. B. Redington Co., 112 S. Sangamon St., Chicago

DRUGS
CHEMICALS

YOUR CONTACT WITH THE WORLD'S MARKETS
ESTABLISHED 1918

OILS
WAXES

ARSENIC, WHITE
CARBON TETRACHLORIDE
CRESOL COMPOUND
LANOLIN
METHYL SALICYLATE
(Artificial Wintergreen)
NAPHTHALENE
ORTHODICHLOROBENZENE
PARADICHLOROBENZENE
PHENOTHIAZINE
TINCTURE GREEN SOAP

ROSENTHAL BERCOW CO., Inc.
25 EAST 26th ST. NEW YORK 10, N. Y.
CABLE ADDRESS "RODRUG"

LINSEED OIL

(see also Brokers and Dealers)

Archer-Daniels-Midland Corp., Minneapolis, Minn.
John H. Calo Co., 19 Rector St., N. Y. 6
Falk & Co., Pittsburgh
William O. Goodrich Co., Milwaukee, Wis.
Spencer Kellogg & Sons, Buffalo, N. Y.
Kelloggs & Miller, Amsterdam, N. Y.
Minnesota Linseed Oil Co., Minneapolis, Minn.
Pacific Vegetable Oil Corp., 62 Townsend St., San Francisco
J. H. Redding, Inc., 17 Battery Place, N. Y.
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Sherwin Williams Co., Cleveland, Ohio
Welch, Holme & Clark Co., 439 West St., N. Y.

LINSEED OIL SOAP (see Potash Soaps)

LIQUID SOAP AND BASE (see Potash Soaps)

MACHINERY, USED (see Used Machinery)

MAGNESIUM CARBONATE

Chas B. Chrystal Co., 53 Park Pl., N. Y. 7
Dow Chemical Co., Midland, Mich.
Innis Speiden & Co., 117 Liberty St., N. Y. 6
Michigan Chemical Corp., St. Louis, Mich.
Merck & Co., Rahway, N. J.
Westvaco Chem. Div., Food Machy. & Chem. Corp., 415 Lexington Ave., N. Y. 17
Whittaker, Clark & Daniels, 260 W. Broadway, N. Y. 13

MAGNESIUM OXIDE (Magnesia)

American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
J. T. Baker Chem. Co., Phillipsburg, N. J.
Chas. B. Chrystal Co., 53 Park Pl., N. Y. 7
Diamond Alkali Co., 300 Union Commerce St., Cleveland 14
Dow Chemical Co., Midland, Mich.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Harshaw Chemical Co., 1945 E. 97th St., Cleveland
Heckathorn & Co., Richmond, Calif.
Innis, Speiden & Co., 117 Liberty St., N. Y. 6
Merck & Co., Rahway, N. J.
Mallinckrodt Chemical Wks., 2nd & Mallinckrodt Sts., St. Louis 7
Michigan Chem. Corp., St. Louis, Mich.
Rosenthal Bercow Co., 25 E. 26th St., N. Y. 10
E. E. Schundler & Co., Joliet, Ill.
Chas. A. Wagner Co., 813 Callowhill St., Phila.
Welch, Holme & Clark Co., 439 West St., N. Y.
Westvaco Chem. Div., Food Machy. & Chem. Corp., 405 Lexington Ave., N. Y.
Whittaker, Clark & Daniels, Inc., 260 W. Bway., N. Y. 13
Witco Chemical Co., 295 Madison Ave., N. Y.

MAGNESIUM STEARATE (see Stearates)

MAHOGANY SULFONATES (see Naphthenic Acids)

MAHOGANY SOAP (This term also used to designate Petroleum Sulfonates. See also Naphthenic Acids, Naphthalene Sulfonates.)

Armour Soap Wks., 1355 W. 31st St., Chicago
Colgate-Palmolive-Peet Co., Jersey City, N. J.
E. F. Drew & Co., 152 E. 26th St., N. Y. 10
Elgo Trading Corp., 220 Broadway, N. Y. 7
Emery Industries, 4300 Carew Tower, Cincinnati
W. C. Hardesty Co., 41 E. 42nd St., N. Y.
Los Angeles Soap Co., Los Angeles, Calif.
Oil States Pet. Co., 233 Broadway, N. Y.
Oronite Chemical Co., 38 Sansome St., San Francisco
Pennotex Oil Corp., 29 Broadway, N. Y. 6
John T. Stanley Co., 642 W. 30th St., N. Y.

MANILA GUM

T. G. Cooper & Co., Cedar & Venango Sts., Phila.
Gillespie-Rogers-Pyatt Co., 75 West St., N. Y.
O. G. Innes Corp., 82 Wall St., N. Y.
Wm. H. Scheel, Inc., 38 Franklin Street, Brooklyn
U. S. Industrial Chemicals, Inc., Lincoln Bldg., N. Y.

MARINE SOAPS (see Salt Water Soaps)

MATS (Corrugated, Perforated, Link)

Dutro Co., 2155 Webster St., Alameda, Calif.
Perfo Mat & Rubber Co., 281 Fifth Ave., N. Y. 16
U. S. Rubber Co., 1230 Ave. of Americas, N. Y.

MATS (Fibre, Straw)

Allied Mat & Matting Co., 279 Pearl St., N. Y.
Samuel Aronson & Son, 233 W. 14th St., N. Y.
Dutro Co., 2155 Webster St., Alameda, Calif.
Frank T. Greco, 305 5th Ave., N. Y.
Koffler Sales Corp., 3757 N. Racine Ave., Chicago 15
S & S Patents, Inc., 1241 N. Clark St., Chicago

MECHANIC'S HAND PASTE (see Hand Soap)

MEDICINAL SOAPS, CAKE

Armour Soap Wks., 1355 W. 31st St., Chicago
J. Eavenson & Sons., Del. & Penn Sts., Camden, N. J.
Hewitt Soap Co., Dayton, O.
Los Angeles Soap Co., Los Angeles, Calif.
Newell Gutradt Co., 350 Fremont St., San Francisco, Cal.
Procter & Gamble Co., Cincinnati
Rare Chemicals, Inc., First & Essex Sts., Harrison, N. J.
Schmidt Soap Products Co., 236 W. North Ave., Chicago
John T. Stanley Co., 642 W. 30th St., N. Y.
Allen B. Wrisley Co., 6801 W. 65th St., Chicago

MEDICINAL SOAPS, LIQUID (see Potash Soaps)

MENTHOL

(see also Essential Oils)

Aroscent, Inc., Main & Chestnut Sts., Dobbs Ferry, N. Y.
S. W. Bridges & Co., 82 Wall St., N. Y.
Centflor Mfg. Co., 243 W. 67th St., N. Y. 1
Consumers Import Co, 350 Fifth Ave., N. Y.
Dodge & Olcott, Inc., 180 Varick St., N. Y.
P. R. Dreyer, 117½ W. 19th St., N. Y.
Enco Chem. Corp., 441 Lexington Ave., N. Y.
Fritzsche Bros., Inc., 76 Ninth Ave., N. Y.
Givaudan-Delawanna, Inc., 330 W. 42nd St., N. Y.
Magnus, Mabee & Reynard, Inc., 16 Desbrosses St., N. Y.
A. Maschmeijer, Jr., Inc., 45 W. 16th St., N. Y.
McKesson & Robbins, Inc., 155 E. 42nd St., N. Y.
Norda Essential Oil & Chem Co., 601 W. 26th St., N. Y.
Orbis Products Corp., 215 Pearl St., N. Y.
S. B. Penick & Co., 50 Church St., N. Y.
Prentiss Drug & Chem. Co., 110 William St., N. Y.
F. Ritter & Co., 4001 Goodwin Ave., Los Angeles 39
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Schimmel & Co., 601 W. 26th St., N. Y.
Sherka Chemical Co., 86 Orange St., Bloomfield, N. J.
Tombarel Prods., 12 E. 22nd St., N. Y.

MERCURY BICHLORIDE (Corrosive Sublimate)

J. T. Baker Chem. Co., Phillipsburg, N. J.
F. W. Berk & Co., 420 Lexington Ave., N. Y.
General Chemical Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Heyden Chemical Corp., 393 7th Ave., N. Y.
Mallinckrodt Chemical Works, St. Louis
Merck & Co., Rahway, N. J.
Metalsalts Corp., 200 Wagarow Rd., Hawthorne, N. J.
New York Quinine & Chem. Wks., N. 11th & Berry Sts., Brooklyn
Chas. Pfizer & Co., 81 Maiden Lane, N. Y.
Rosenthal Bercow Co., 25 E. 26th St., N. Y. 10

METAL POLISH (see Polish)

METALLIC SOAPS (see Stearates)

METERS (see Instruments)

METHANOL (Synthetic)

Carbide & Carbon Chem., 30 E. 42nd St., N. Y.
Commercial Solvents Corp., 17 E. 42nd St.,N. Y.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Merck & Co., Rahway, N. J.
Solvay Sales Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.

METHYL ANTHRANILATE

(see also Aromatic Chemicals)

Aromatic Products, Inc., 15 E. 30th St., N. Y.
Dow Chemical Co., Midland, Mich.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Felton Chemical Co., 603 Johnson Ave., Brooklyn, N. Y.
Florasynth Labs., Olmstead & Starling Aves., N. Y.
Fritzsche Bros., 76 9th Ave., N. Y. 11
Givaudan-Delawanna, Inc., 330 W. 42nd St., N. Y.
Magnus, Mabee & Reynard, 16 Desbrosses St., N. Y. 13
A. Maschmeijer, Jr., Inc., 45 W. 16th St., N. Y.
Polak's Frutal Wks., 33 Sprague Ave., Middletown, N. Y.
Ungerer & Co., 161 Ave. of Americas, N. Y. 13

METHYL BROMIDE

Dow Chemical Co., Midland, Mich.
Eston Chemicals, Inc., 3100 E. 26th St., Los Angeles
Innis Speiden & Co., 117 Liberty St., N. Y. 6
Michigan Chem. Co., St. Louis, Mich.
Westvaco Chem. Div., Food Machy. & Chem. Corp., 405 Lexington Ave., N. Y.

METHYL CELLULOSE

Antara Prods., Div. General Dyestuff Corp., 435 Hudson St., N. Y. 14
Dow Chemical Co., Midland, Mich.
Hercules Powder Co., Wilmington, Del.

METHYL SALICYLATE (Artificial Wintergreen)

(see also Aromatic Chemicals)

J. T. Baker Chem. Co., Phillipsburg, N. J.
Dow Chemical Co., Midland, Mich.
Felton Chemical Co., 603 Johnson Ave., Bdooklyn, N. Y.
Fritzsche Bros., 76 9th Ave., N. Y. 11
Givaudan-Delawanna, Inc., 330 W. 42nd St., N. Y.
Heyden Chemical Corp., 393 7th Ave., N. Y.
Magnus, Mabee & Reynard, 16 Desbrosses St., N. Y. 13
Merck & Co., Rahway, N. J.
Monsanto Chemical Co., 1700 S. 2nd St., St. Louis
Schimmel & Co., 601 W. 26th St., N. Y. 1
Verona Chemical Co., 26 Verona Ave., Newark, N. J.

MILLS, SOAP POWDER (see Soap Machinery & Grinding Machinery)

MINERAL OIL, WHITE (see White Mineral Oil)

MINERAL SOAP (see Petrolatum)

MIRBANE OIL (Nitrobenzene)

(see also Essential Oils)

Calco Chemical Co., Bound Brook, N. J.
E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.
Fritzsche Bros., 76 9th Ave., N. Y. 11
Innis, Speiden & Co., 117 Liberty St., N. Y. 6
Magnus, Mabee & Reynard, 16 Desbrosses St., N. Y. 13
Monsanto Chemical Co., 1700 S. 2nd St., St. Louis
National Aniline Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Naugatuck Aromatics, Inc., 254 Fourth Ave., N. Y.
Schimmel & Co., 601 W. 26th St., N. Y. 1
Ungerer & Co., 161 Ave. of Americas, N. Y. 13

MIXERS (Portable)

Allied Steel & Equipment Co., Chester, N. J.
Alsop Engineering Corp., 103 Green St., Milldale, Conn.
Consolidated Products Co., 15 Park Row, N. Y. (Used)
Ertel Engineering Corp., 7 Front St., Kingston, N. Y.
Filter Paper Co., 2464 S. Michigan Ave., Chicago
First Machy. Corp., 157 Hudson St., N. Y. (Used)
F. R. Hormann & Co., 186 Joralemon St., Bklyn, 2
Houchin Machinery Co., Hawthorne, N. J.
Industrial Process Engineers, 8 Lister Ave., Newark 5, N. J.
International Engineering, 1145 Bolander Ave., Dayton, O.
Mixing Equipment Co., Inc., 167 Mt. Read Blvd., Rochester, N. Y.
Newman Tallow & Soap Mach. Co., 1051 W. 35th St., Chicago (Used)
Pfaudler Co., 89 East Ave., Rochester, N. Y.
H. K. Porter Co.. 49th & Harrison Sts., Pittsburgh
Rapids Machy. Co., Marion, Ia.
Read Machy. Co., York, Pa.
Geo. G. Rodgers Co., 225 W. 34th St., N. Y.
Chas. Ross & Son Co., 148 Classon Ave., Bklyn. 5
Satisfaction Supply Co., 508 W. Broadway, N. Y. 12
U. S. Stoneware Co., Akron 9, O.

MIXING MACHINERY (Change Can Mixers)

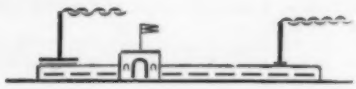
Abbe Engineering Co., 50 Church St., N. Y.
Allied Steel & Equipment Co., Chester, N. J.
Alsop Engineering Corp., 103 Green St., Milldale, Conn.
Amer. Mach. & Foundry Co., 511 5th Ave., N. Y.
Arthur Colton Co., Detroit, Mich.
Consolidated Products Co., 15 Park Row, N. Y. (Used)
J. H. Day Co., 1144 Harrison Ave., Cincinnati
First Machy. Corp., 157 Hudson St., N. Y. (Used)
Houchin Machy. Co., Hawthorne, N. J.
International Engineering, 1145 Bolander Ave., Dayton, O.
Kent Machine Works, 39 Gold St., Brooklyn
Mixing Equipment Co., Inc., 167 Mt. Read Blvd., Rochester, N. Y.
Newman Tallow & Soap Mach., 1051 W. 35th St., Chicago (Used)
H. K. Porter Co.. 49th & Harrison Sts., Pittsburgh
Rapids Machy. Co., Marion, O.
Read Machy. Co., York, Pa.
Chas. Ross & Son Co., 150 Classon Ave., Brooklyn
Troy Engine & Machine Co., Troy, Pa.
U. S. Stoneware Co., Akron 9, O.

MIXING MACHINERY (Dry Products)

Abbe Engineering Co., 50 Church St., N. Y.
Allied Steel & Equipment Co., Chester, N. J.
Alsop Engineering Corp., Milldale, Conn.
Amer. Mach. & Foundry Co., 511 5th Ave., N. Y.
Atlas Steel Construction Co., Irvington, N. Y.
Brower Mfg. Co., 411 N. 3rd St., Quincy, Ill.
Consolidated Products Co., 15 Park Row, N. Y. (Used)
J. H. Day Co., 1144 Harrison Ave., Cincinnati
First Machy. Corp., 157 Hudson St., N. Y. (Used)
B. F. Gump Co., 1325 S. Cicero Ave., Chicago
Houchin Machinery Co., Hawthorne, N. J.
Huber Machine Co., 259—46th St., Brooklyn
Industrial Process Engineers, 8 Lister Ave., Newark 5
International Engineering, 1145 Bolander Ave., Dayton, Ohio
Lancaster Iron Works, Lancaster, Pa.
Newman Tallow & Soap Mach. Co., 1051 W. 35th St., Chicago (Used)
Patterson-Kelley Co., East Stroudsburg, Pa.
H. K. Porter Co., 49th & Harrison Sts., Pittsburgh
A. E. Poulsen & Co., 2025 San Fernando Rd., Los Angeles, Cal.
Prater Pulverizer Co., 1829 S. 55th Ave., Chicago
Rapids Machy. Co., Marion, Ia.
Raymond Pulverizer Div., 1314 N. Branch St., Chicago 22
Read Machy. Co., York, Pa.
Robinson Mfg. Co., Muncy, Pa.
Geo. G. Rodgers Co., 225 W. 34th St., N. Y.
Chas. Ross & Son Co., 150 Classon Ave., Brooklyn
Scottdel, Inc., Swanton, Ohio
Sprout Waldron & Co., Muncy, Pa.

ALLIED STEEL & EQUIPMENT CO.

manufactures



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ALLIED STEEL & EQUIPMENT CO.

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MIXING MACHINERY (Dry Products) (Contd.)

Stephens-Adamson Mfg. Co., Aurora, Ill.
F. J. Stokes Machine Co., Philadelphia, Pa.
Struthers-Wells Corp., Warren, Pa.
Sturtevant Mill Co., Dorchester, Boston 22, Mass.
Aurelio Tanzi Engineering Co., 430 Jefferson St., Bklyn.
U. S. Stoneware Co., Akron 9, O.

MIXING MACHINERY (General)

Allied Steel & Equipment Co., Chester, N. J.
Alsop Engineering Corp., 103 Green St., Milldale, Conn.
Amer. Mach. & Foundy Co., 511 5th Ave., N. Y.
Baker-Perkins Co., Saginaw, Mich.
Brower Mfg. Co., 411 N. 3rd St., Quincy, Ill.
Arthur Colton Co., Detroit
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
J. H. Day Co., 1144 Harrison Ave., Cincinnati
Eastern Industries, Inc., 296 Elm St., New Haven, Conn.
Edge Moor Iron Wks., Edge Moor, Del.
Eppenbach, Inc., 45-10 Vernon Blvd., L. I. C., N. Y.
Filter Paper Co., 2464 S. Michigan Ave., Chicago
First Machy. Corp., 157 Hudson St., N. Y. (Used)
G.M.T. Colloid Mill Corp., 30 Church St., N. Y. 7
B. F. Gump Co., 1325 S. Cicero Ave., Chicago
Houchin Machinery Co., Hawthorne, N. J.
Huber Machine Co., 259—46th St., Brooklyn
Industrial Process Engineers, 8 Lister Ave., Newark 5
International Engineering, 1145 Bolander Ave., Dayton, O.
Kent Machine Works, 37 Gold St., Brooklyn
Lancaster Iron Works, Lancaster, Pa.
J. M. Lehmann Co., 566 New York Ave., Lyndhurst, N. J.
Littleford Bros., 443 E. Pearl St., Cincinnati
Mixing Equipment Co., 167 Mt. Read Blvd., Rochester, N. Y.
Newman Tallow & Soap Mach. Co., 1051 W. 35th St., Chicago (Used)
Patterson-Kelley Co., E. Stroudsburg, Pa.
Pfaudler Co., 89 East St., Rochester, N. Y.
H. K. Porter Co., 49th & Harrison Sts., Pittsburgh
A. E. Poulsen & Co., 2025 San Fernando Rd., Los Angeles, Cal.
Prater Pulverizer Co., 1829 S. 55th Ave., Chicago
Rapids Machy., Marion, Ia.
Read Machinery Co., York, Pa.
Chas. Ross & Son Co., 150 Classon Ave., Brooklyn
Raymond Pulverizer Div., 1314 N. Branch St., Chicago 22
Scottdel, Inc., Swanton, Ohio
Sowers Mfg. Co., 1296 Niagara St., Buffalo, N. Y.
Sprout Waldron & Co., Muncy, Pa.
Stephens-Adamson Mfg. Co., Aurora, Ill.
F. J. Stokes Mach. Co., Philadelphia, Pa.
Struthers-Wells Co., Warren, Pa.
Sturtevant Mill Co., Dorchester, Boston 22, Mass.
Turbo Mixer Corp., 247 Park Ave., N. Y.
U. S. Stoneware Co., Akron 9, O.
Waterville Foundry & Machine Co., Waterville, N. Y.

MOP HANDLES

Amer. Standard Mfg. Co., 2509 S. Green St., Chicago
Arcade Industries, Inc., 1776 Wrightwood Ave., Chicago 14
Stanley H. Coffin, 12 Pearl St., Boston
Eagle Woodenware Mfg. Co., Hamilton, O.
Economy Mop Wringer Co., 1944 W. 21st St., Chicago
Erie Mop & Wringer Co., East Rochester, N. Y.
Howard Dustless Duster Co., Boston
W. E. Kautenberg Co., Freeport, Ill.
Marvel Mop Division, Zelinkoff Co., Kans.
Massasoit Mfg. Co., 72 Park Pl., N. Y.
Rex-Cleanwall Corp., Brazil, Ind.
Rubon Wood Finishing & Prods. Co., 500 W. 7th St., Kansas City, Mo.
Silver-Chamberlin Co., Clayton, N. Y.
White Mop Wringer Co., Fultonville, N. Y.

MOP WRINGERS AND PAILS

Howard J. Barrett, 1908 Walnut St., Phila.
Clarke Sanding Mach. Co., Muskegon, Mich.
Stanley H. Coffin, 12 Pearl St., Boston
Colson Mfg. Co., Elyria, O.
Dobbins Mfg. Co., Elkhart, Ind.
Eagle Woodenware Mfg. Co., Hamilton, Ohio

MOP WRINGERS AND PAILS (Contd.)

Economy Mop Wringer Co., 1944 W. 21st St., Chicago
Finnell System, Inc., Elkhart, Ind.
Geerpres Wringer, Inc., Muskegon, Mich.
Geuder, Paeschke & Frey, Milwaukee, Wis.
Illinois Duster Co., 1944 Webster Ave., Chicago
S. C. Lawlor Co., 122 N. Aberdeen St., Chicago
Market Forge Co., 25 Garvey St., Everett 49, Mass.
Palmer Fixture Co., Waukesha, Wisc.
Rochester Can Co., 100 Greenleaf St., Rochester, N. Y.
Sweet Mop Co., 1913 Fremont Ave., South Pasadena, Cal.
U. S. Steel Prods. Co., 30 Rockefeller Plaza, N. Y. 20
White Mop Wringer Co., Fultonville, N. Y.

MOPPING TANKS AND TRUCKS

Howard J. Barrett, 1908 Walnut St., Phila.
Clarke Sanding Mach. Co., Muskegon, Mich.
Eagle Woodenware Mfg. Co., Hamilton, O.
Economy Mop Wringer Co., 1944 W. 21st St., Chicago
Finnell System, Inc., Elkhart, Ind.
Geerpres Wringer, Inc., Muskegon, Mich.
S. C. Lawlor Co., 122 N. Aberdeen St., Chicago
Palmer Fixture Co., Waukesha, Wisc.
White Mop Wringer Co., Fultonville, N. Y.

MOPS

Alabama Broom & Mattress Co., Huntsville, Ala.
Amer. Standard Mfg. Co., 2509 S. Green St., Chicago
Amer. Textile Prods. Co., 5606 Euclid Ave., Cleveland
Burdett-Rose Mfg. Co., 6100 Independence Rd., Kansas City, Mo.
California Cotton Mills Co., Oakland, Calif.
Chattanooga Broom & Mop Co., Chattanooga, Tenn.
Clark Bros. Mfg. Co., 34 N. Front St., Phila.
Clarke Sanding Mach. Co., Muskegon, Mich.
Stanley H. Coffin, 12 Pearl St., Boston, Mass.
Continental Car-Na-Var Corp., Brazil, Ind.
Dutro Co., 2155 Webster St., Alameda, Calif.
Eagle Woodenware Mfg. Co., Hamilton, O.
Golden Star Polish Mfg. Co., 2901 E. 13th St., Kansas City, Mo.
Howard Dustless Duster Co., Boston, Mass.
Illinois Duster & Brush Co., 1944 Webster Ave., Chicago
W. E. Kautenberg Co., P. O. Box 255, Freeport, Ill.
Klenzall Mfg. Co., Atlanta, Ga.
Marvel Mop Division, Zelinkoff Co., Wichita, Kans.
Masury Young Co., 76 Boland St., Boston 29
Palmer Fixture Co., Waukesha, Wisc.
W. M. Pettett Co., Tulsa, Okla.
Piedmont Mop Co., 321 Atando Ave., Charlotte, N. C.
Pioneer Mfg. Co., Cleveland, Ohio
Rex-Cleanwall Corp., Brazil, Ind.
Rubon Woodfinishing & Prod. Co., 500 W. 7th St., Kansas City, Mo.
Silver-Chamberlain Co., Clayton, N. J.
T. C. Smyth Mfg. Co., Union City, Ind.
Sweet Mop Co., 1913 Fremont Ave., South Pasadena, Cal.
Tate Mfg. Co., Boston, Mass.
M. J. Toohey & Co., Fall River, Mass.
Tuscaloosa Mills, Tuscaloosa, Ala.
Tu-Way Products Co., 1423 Franklin St., Detroit
Yocma Mills, Water Valley, Miss.

MOSQUITO LARVICIDES

A-M-R Chemical Co., 985 E. 35th St., Bklyn. 18
Baird & McGuire, Inc., Holbrook, Mass.
Cary Mfg. Co., 4849 Mansfield St., San Diego 16, Calif.
Cenol Co., 4250 N. Pulaski Ave., Chicago
Chem. Service Co. of Balto., Howard & West Sts., Balto.
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Chipman Chemical Co., Bound Brook, N. J.
Churchill Mfg. Co., Galesburg, Ill.
Clifton Chemical Co., 62 William St., N. Y.
Crystal Soap & Chem. Co., 6300 State Rd., Philadelphia
Davies-Young Soap Co., Dayton, O.
E. I. du Pont de Nemours & Co., Wilmington
Eagle Soap Corp., Huntington, Ind.
Fuld Bros., 702 S. Wolfe St., Baltimore
Geigy Co., 89 Barclay St., N. Y.
Heckathorn & Co., Richmond, Calif.
R. M. Hollingshead Corp., Camden, N. J.
James Huggins & Son, 239 Medford St., Malden, Mass.
Hunt Mfg. Co., Lisbon Rd., Cleveland
Hysan Prods. Co., 932 W. 38th Place, Chicago
Koppers Co., Koppers Bldg., Pittsburgh
McCormick & Co., Inc., Baltimore, Md.
Merck & Co., Rahway, N. J.
Michigan Chem. Corp., St. Louis, Mich.
Prentiss Drug & Chem. Co., 110 William St., N. Y.
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Rohm & Haas Co., 222 W. Washington Sq., Phila.
Shell Chemical Corp., 500 5th Ave., N. Y. 18
Uncle Sam Chemical Co., 573 W. 131st St., N. Y. C.
Thompson-Hayward Chemical Co., Kansas City, Mo.
U. S. Sanitary Specialties Corp., 1003 S. California, Ave., Chicago 12
James Varley & Sons, 2100 Switzer Ave., St. Louis
Velsicol Corp., 330 E. Grand Ave., Chicago
Whitmire Research Labs., 339 S. Vandeventer, St. Louis 10
York Chem. Co., 23 Dean St., Bklyn

MOTH CAKES AND CRYSTALS (see Deodorizing Blocks)

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Clopay Co., Cincinnati
Kennedy Car Liner Co., Indianapolis
LeMontre Co., Cincinnati
Puro Co., 2801 Locust St., St. Louis 3
Rosette Co., 200 Tillary St., Brooklyn

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A-M-R Chemical Co., 985 E. 35th St., Bklyn. 18
Ampion Corp., 4-88—47th Ave., L. I. City, N. Y.
Analab Laboratories, 285 Franklin St., Boston 10
Antara Prods., Div. General Dyestuff Corp., 435 Hudson St., N. Y. 14
Arnold Hoffman & Co., Providence, R. I.
Barrett Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Baird & McGuire, Inc., Holbrook, Mass.
Brilco Labs., 1553 63rd St., Bklyn.
Cenol Co., 4250 N. Crawford Ave., Chicago
Chem. Mfg. & Dist Co., Easton, Pa.
Chemical Service Co. of Baltimore, Howard & West Sts., Balt.
Click Chemical Corp., 41 Morrell St., Brooklyn 6
Connecticut Chem. Research Corp., Bridgeport 5, Conn.
Dow Chemical Co., Midland, Mich.
Eagle Soap Corp., Huntington, Ind.
E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.
Elkay Prods. Co., 323 W. 16th St., N. Y.
Fairfield Labs., Inc., 417 Cleveland Ave., Plainfield, N. J.
Fine Organics, Inc., 211 E. 19th St., N. Y.
Fuld Bros., 702 S. Wolfe St., Baltimore
Geigy Co., 89 Barclay St., N. Y.
James Good Co., Susquehanna Ave. & Martha St., Phila.
H. W. Hamilton Co., 34 E. 39th St., N. Y.
Higley Chemical Co., Dubuque, Iowa
R. M. Hollingshead Corp., Camden, N. J.
Hooker Electrochemical Co., Niagara Falls, N. Y.
Hysan Prods. Co., 932 W. 38th Place, Chicago
Koppers Co., Pittsburgh 19
Kwik Products Co., 451 W. 28th St., N. Y.
Michigan Chem. Corp., St. Louis, Mich.
Onyx Oil & Chem. Co., Warren & Morris Sts., Jersey City 2
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Penna. Salt Mfg. Co., 1000 Widener Bldg., Phila.
Per-Mo Products Co., 3604 Woodland Ave., Kansas City, Mo.
Puro Co., 2801 Locust St., St. Louis
Quaker Chem. Prods. Co., Conshohocken, Pa.
Chas. L. Read & Co., 120 Greenwich St., N. Y.
Reilly Tar & Chemical Corp., Indianapolis
Rohm & Haas Co., 222 W. Washington Sq., Philadelphia
Science Industries, 609-15 Geyer Ave., St. Louis
E. B. Snyder Labs., 2137 E. Harold St., Phila. 25
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Tetco Co., 458 S. Spring St., Los Angeles
Thompson-Hayward Chemical Co., 2915 S. W. Blvd., Kansas City, Mo.

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Uncle Sam Chem. Co., 573 W. 131st St., N. Y.
U. S. Sanitary Spec. Corp., 1003 S. California Blvd., Chicago 12
Warwick Chemical Co., 10-10 44th Ave., L. I. C. 1, N. Y.
Whitmire Research Corp., 339 S. Vandeventer, St. Louis
G. H. Wood & Co., Toronto, Ont., Canada
Woodlets, Inc., Portland, Pa.

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MOTTLED SOAPS

Lightfoot Schultz Co., Hoboken, N. J.
Los Angeles Soap Co., Los Angeles
National Soap Co., P. O. Box 1613, Tacoma, Wash.
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Schmidt Soap Products Co., 236 W. North Ave., Chicago
John T. Stanley Co., 642 W. 30th St., N. Y.
Swift & Co., Chicago
M. Werk Co., Cincinnati, O.
Allen B. Wrisley Co., 6801 W. 65th St., Chicago

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MUSKS, ARTIFICIAL (see Aromatic Chemicals)

NAPHTHA (see Solvent Naphtha)

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American-British Chem. Supplies, 180 Madison Ave., N. Y.
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S. H. Bell Co., 1407 Gulf Bldg., Pittsburgh
John H. Calo Co., 19 Rector St., N. Y. 6
Dominion Tar & Chem. Co., Ltd., Montreal
E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.
Harshaw Chemical Co., 1945 E. 97th St., Cleveland 6
Innis, Speiden & Co., 117 Liberty St., N. Y.
Koppers Co., Pittsburgh 19
Mirvale Chem. Co., Cleckheaton, Yorks, England
Neville Co., Pittsburgh
Reilly Tar & Chem. Corp., Lndianapolis
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Standard Naphthalene Prods. Co., S. Kearny, N. J.
Tar Residuals, Inc., 420 Lexington Ave., N. Y.
Velsicol Corp., 330 E. Grand Ave., Chicago

NAPHTHALENE SULFONATES

Alrose Chem. Co., Box 1294, Providence, R. I.
Antara Prods. Div. General Dyestuff Corp., 435 Hudson St., N. Y. 18
Atlantic Refining Co., 260 S. Broad St., Phila.
E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.
Elgo Trading Corp., 220 Broadway, N. Y. 7
Fine Organics, Inc., 211 E. 19th St., N. Y. 3
National Aniline & Chem. Div., 40 Rector St., N. Y.
Oronite Chemical Co., 38 Sansome St., San Francisco
Pennsylvania Refining Co., Butler, Pa.
Shell Chemical Corp., 500 5th Ave., N. Y. 18
Stepan Chem. Co., 1353 N. Branch St., Chicago 22
L. Sonneborn Sons, 300 4th Ave., N. Y.

NAPHTHENATES (see Copper Naphthenate, Zinc Naphthenate)

NAPHTHENIC ACIDS (and Sulfonic Sludges)

Advance Solvents & Chem. Co., 245—5th Ave., N. Y.
Atlantic Refining Co., 260 Broad St., Philadelphia
John H. Calo Co., 19 Rector St., N. Y. 6
Enjay Co., 15 W. 51st St., N. Y. 19
General Petroleum Corp., 108 W. 2nd St., Los Angeles
Harshaw Chemical Co., 1945 E. 97th St., Cleveland 6
Hummel Chem. Co., 90 West St., N. Y.
Nuodex Prods. Co., Elizabeth, N. J.
Oronite Chem. Co., 38 Sansome St., San Francisco 4
Pennsylvania Refining Co., Butler, Pa.
Petroleum By-Products Co., 15 Whitehall St., N. Y.
Petroleum Specialties, Inc., 400 Madison Ave., N. Y.
Shell Chemical Corp., 500 5th Ave., N. Y. 18
Sherwood Refining Co., Englewood, N. J.
L. Sonneborn Sons, 300 4th Ave., N. Y.

NICKEL-CLAD EQUIPMENT (see also Soap Machinery)

Allied Steel & Equipment Co., Chester, N. J.
Edge Moor Iron Wks., Edge Moor, Del.
Houchin Machinery Co., Hawthorne, N. J.
International Nickel Co., 67 Wall St., N. Y.
Alan Porter Lee, Inc., 81 Miller Road, Morristown, N. J.
Littleford Bros., 453 E. Pearl St., Cincinnati
Lukens Steel Corp., Coatesville, Pa.
Patterson-Kelley Co., E. Stroudsburg, Pa.
H. K. Porter Co., 49th & Harrison Sts., Pittsburgh
Project Construction Corp., 39 Broadway, N. Y. 6
Read Machy. Div., York, Pa.
F. J. Stokes Machine Co., Philadelphia
Wurster & Sanger, Inc., 5201 S. Kenwood Ave., Chicago

NICOTINE COMPOUNDS

American-British Chem. Supplies, 180 Madison Ave., N. Y. 16
California Spray-Chemical Corp., Lucas and Ortho Way, Richmond, Calif.
Crystal Soap & Chem. Co., 6300 State Rd., Philadelphia
E. I. du Pont de Nemours & Co., Wilmington, Del.
General Chemical Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Heckathorn & Co., Richmond, Calif.
Hood River Spray Co., Hood River, Ore.
Kay-Fries Chemicals, 180 Madison Ave., N. Y. 16
Kemiko Mfg. Co., 500 Chancellor Ave., Irvington, N. J.
Sanocide Spray Co., Fennville, Mich.
Tobacco By-Products & Chem. Corp., Richmond 8, Va.

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Amer. Agricultural Chem. Co. 50 Church St., N. Y.
Amer. Cyanamid Co., 30 Rockefeller Plaza, N. Y.
E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.
Eston Chemicals, Inc., 3100 E. 26th St., Los Angeles
General Chemical Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Lennig Division, 222 W. Washington Sq., Philadelphia
Monsanto Chemical Co., 1724 S. 2nd St., St. Louis
Penna. Salt Mfg. Co., Philadelphia
Rosenthal Bercow Co., 25 E. 26th St., N. Y.

NITROPARAFFINS

Commercial Solvents Corp., 17 E. 42nd St., N. Y.

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NOVELTY SOAPS

Armour & Co., 1355 W. 31st St., Chicago
Hewitt Soap Co., Dayton, O.
Illustrated Soap Co., 43 W. 10th St., N. Y.
Lightfoot Schultz Co., 1412 Park Ave., Hoboken, N. J.
Peck's Products Co., 610 E. Clarence Ave., St. Louis
Schmidt Soap Products Co., 236 W. North Ave., Chicago
John T. Stanley Co., 642 W. 30th St., N. Y.
Unique Soaps, P. O. Box No. 61, Covington, Ky.
Allen B. Wrisley Co., 6801 W. 65th St., Chicago

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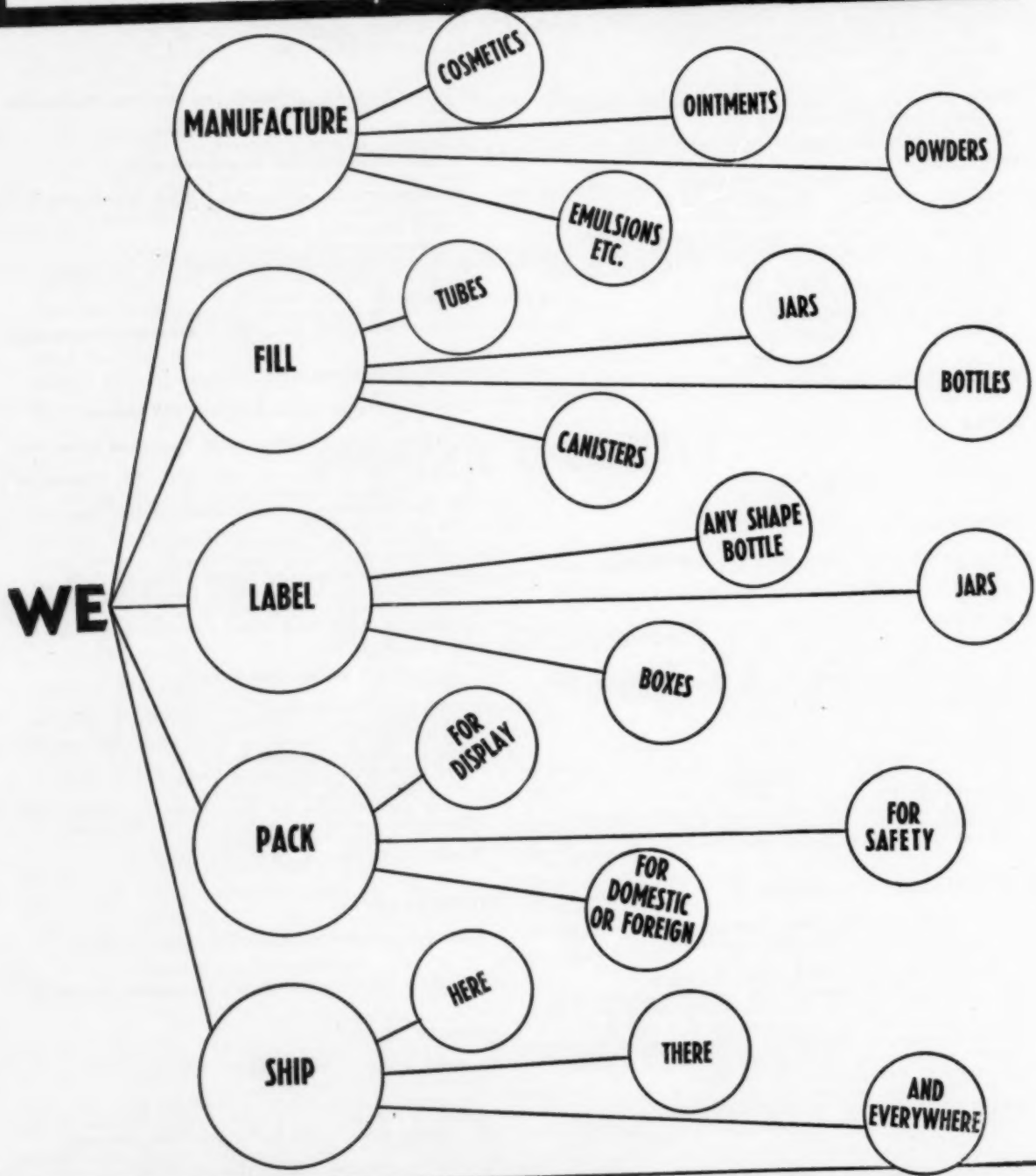
Bete Fog Nozzle Co., Greenfield, Mass.
Connecticut Chem. Research Corp., Bridgeport 5, Conn.
H. D. Hudson Mfg. Co., 589 E. Illinois St., Chicago 11
Monarch Mfg. Works, 3406 Miller St., Phila.

PRIVATE FORMULA WORK



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Wurster & Sanger, Inc., 5201 S. Kenwood Ave., Chicago

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(see also Brokers and Dealers)

Irving R. Boody & Co., 120 Wall St., N. Y.
T. G. Cooper & Co., Cedar & Venango Sts., Phila.
Eastern Industries, Inc., Ridgefield, N. J.
W. R. Grace & Co., 7 Hanover Sq., N. Y.
Otto A .C. Hagen Corp., Public Ledger Bldg., Phila.
Leghorn Trading Co., 21 West St., N. Y.
J. H. Redding Co., 17 Battery Pl., N. Y.
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Sergeant Chem. Co., 7 Dey St., N. Y.
Smith-Weihman Co., 15 Moore St., N. Y.
Welch, Holme & Clark Co., 439 West St., N. Y.

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(see also Brokers and Dealers)

T. G. Cooper & Co., Cedar & Venango Sts., Phila.
Eastern Industries, Inc., Ridgefield, N. J.
Leghorn Trading Corp., 21 West St., New York
Otto A. C. Hagen Corp., Public Ledger Bldg., Phila.
J. H. Redding Co., 17 Battery Pl., N. Y.
Rosenthal Bercow Co., 25 E. 26th St., N. Y. 10
Sergeant Chem. Co., 7 Dey St., N. Y.
Smith-Weihman Co., 15 Moore St., N. Y.
Welch, Holme & Clark Co., 439 West St., N. Y.

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American Cyanamid Co., Calco Chem. Div., Bound Brook, N. J.
Antara Products, Division of General Dyestuff Corp. 435 Hudson St., N. Y.
Geigy Co., 89 Barclay St., N. Y.
Koppers Co., Pittsburgh 19, Pa.
National Aniline Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y. 6

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Bonewitz Chemicals, Inc., Burlington, Ia.
Chem. Prods. Co. of N. J., 207 Astor St., Newark, N. J.
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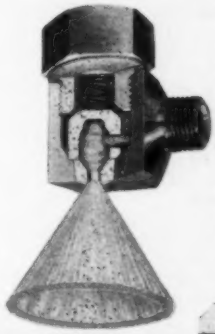
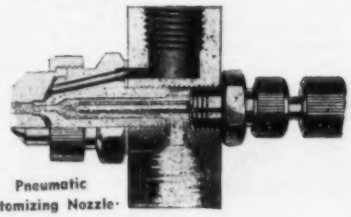
soap manufacturers

Typical Spraying Systems spray nozzles for soap manufacturing are shown here. The Whirljet Nozzle at left is built with a tungsten carbide whirl chamber and orifice insert for high abrasion resistance. This nozzle is recommended as a long-life unit for soap spray drying. Spraying Systems Pneumatic Atomizing Nozzles, such as shown below, provide extremely fine atomization, uniform spray pattern, and exact volume control for such operations as perfume spraying.



WHIRLJET
¾ BBSSTC



Pneumatic
Atomizing Nozzle

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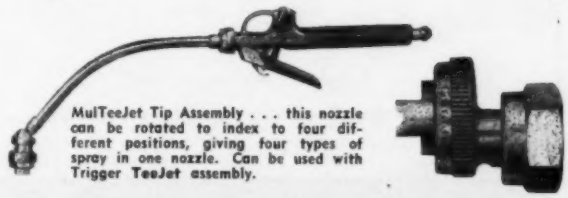
For the residual spraying of insecticides, Spraying Systems TeeJet Spray Nozzles give you the exactly even distribution that makes this type of spraying effective. TeeJet Nozzles are precision made, and provide a highly uniform flat spray pattern. Orifice tips are interchangeable and are available in any capacity required. A wide range of spray nozzle accessories are also supplied such as line strainers, suction strainers, fittings and connectors. Below is shown the Trigger TeeJet with Curved Extension. This unit gives hand valve control in spraying and is quality built for long, effective operation.



MulTeeJet Tip Assembly . . . this nozzle can be rotated to index to four different positions, giving four types of spray in one nozzle. Can be used with Trigger TeeJet assembly.

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Gaylord Chem. Co., 701 Woodswether Rd., Kansas City
R. Gesell, Inc., 200 W. Houston St., N. Y.
Harwin Laboratories, 44 Willow St., Newark, N. J.
Heckathorn & Co., Richmond, Calif.
Leeds Sales Co., 34 W. 34th St., New York
Manufacturers Aid Co., 244 Green St., Bklyn. 22
McKay-Davis Co., 851 Islington St., Toledo
Private Brands, Inc., 300 S. 3rd St., Kansas City 18, Kan.
Seaboard Mfg. Labs., Water & Mifflin Sts., Phila. 48
Sheffield Tube Corp., 170 Broad St., New London, Conn. (tube filling service)
Skotch Prods. Corp., 2710 Detroit Ave., Cleveland 13
E. B. Snyder Labs., 2137 E. Harold St., Phila. 25
Stevens Wiley Mfg. Co., Hancock & W. Berks Sts., Phila. 22
Tex-ite Prods. Co., 60 Dobbin St., Bklyn. 22
Trans-Pac Services, Inc., 122 Washington Ave., Bklyn.
Trio Chemical Wks., 341 Scholes St., Bklyn. 6
Waverly Mfg. Co., 1825 Wylie St., Phila.
Van Pell Chem. & Supply Corp., 48 E. First St., N. Y.

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Cans, Inc., 3217 W. 47th Pl., Chicago
Central Can Co., 2415 W. 19th St., Chicago
Columbia Can Co., 315 Wyckoff Ave., Brooklyn
Continental Can Co., 100 E. 42nd St., N. Y.
Eastern Can Co., Keap St. & Kent Ave., Bklyn.
Fein's Tin Can Co., Bush Terminal, Brooklyn
Geuder, Paeschke & Frey Co., Milwaukee
Inland Steel Container Co., 6532 S. Menard Ave., Chicago
J & L Steel Barrel Co., Pittsburgh, Pa.
National Can Co., 110 E. 42nd St., N. Y.
National Steel Barrel Co., 3860 E. 91st St., Cleveland
Pittsburgh Can Co., Pittsburgh, Pa.
Pressed Steel Tank Co., 5717 Greenfield Ave., Milwaukee
Rheem Mfg. Co., 570 Lexington Ave., N. Y.
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Vulcan Tin Can Co., Bellwood, Ill.
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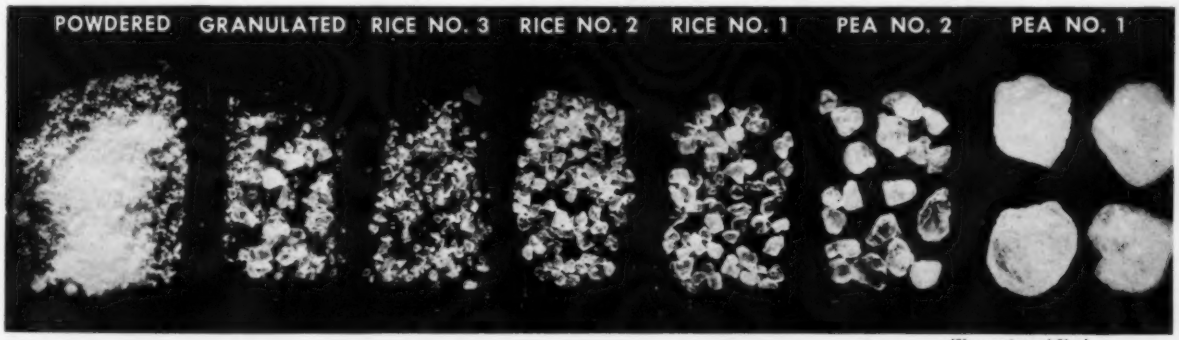

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Flash Point	170-180°F.
Fire Point	185-195°F.
Initial Boiling Point	385-395°F.
Distillation End Point	485-495°F.
Unsulphonatable Residue	99%
Color	Water White
Odor	Odorless

Penn-Drake Super-Sol Specifications

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C.O.C. Flash °F.	130/135
C.O.C. Fire °F.	140/145
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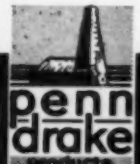

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E. W. Colledge, General Sales Agent, Inc., P. O. Box 389, Jacksonville, Fla.
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John A. Chew, Inc., 60 E. 42nd St., N. Y. 17
Continental Turp. & Rosin Corp., Laurel, Miss.
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Industrial Chem. Sales Div., West Va. Pulp & Paper Co., 230 Park Ave., N. Y.
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Baird & McGuire, Inc., Holbrook, Mass.
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Baum's Castorine Co., Rome, N. Y.
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Brilco Labs., 1553-63rd St., Bklyn 19
Buckingham Wax Corp., Van Dam St. & Borden Ave., L. I. City, N. Y.
Chemical Mfg. & Distrib. Co., Easton, Pa.
Chem. Service Co. of Balto., Howard & West Sts., Balto.
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Clifton Chemical Co., 62 William St., N. Y.
Churchill Mfg. Co., Galesburg, Ill.
Crystal Soap & Chem. Co., 6300 State Rd., Phila. 35
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Trio Chem. Wks., 341 Scholes St., Bklyn.
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Crosby Chemicals, Inc., DeRidder, La.
Glidden Co., Naval Stores Div., Jacksonville, Fla.
Gulf Naval Stores Supply Co., Whitney Bldg., New Orleans
Hercules Powder Co., Wilmington, Del.
Industrial Chem. Sales Div., West Va. Pulp & Paper Co., 230 Park Ave., N. Y.
Newport Industries, Inc., 230 Park Ave., N. Y.
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(see also Dealers)

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Niagara Alkali Co., 60 E. 42nd St., N. Y.
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Analab Labs., 285 Franklin St., Boston 10
Antiseptol Co., 5524 Northwest Highway, Chicago
Armour Soap Wks., 1355 W. 31st St., Chicago
Arrow Laboratories, 236 W. North Ave., Chicago
Banner Chemical Products Corp., 60 Elm St., Newark, N. J.
Baums Castorine Co., 200 Mathew St,. Rome, N. Y.
Boston Chemical Industries, 64 E. Brookline St., Boston
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James Counts Soap Co., 2nd & Washington Aves., St. Louis, Mo.
Creco Co., Creco Bldg., L. I. City, N. Y.
Crystal Soap & Chem. Co., 6300 State Rd., Phila. 35
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Eagle Soap Corp., Huntington, Ind.
J. Eavenson & Sons, Del. & Penn Sts., Camden, N. J.
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James Good, Inc., 2116 Susquehanna Ave., Phila.
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Ped-O-Flo Co., Waverly, Iowa
Piatt & Smillie Chemicals, 2329 Pine St., St. Louis 3
Procter & Gamble Co., Cincinnati, O.
Puritan Soap Co., 573 Lyell Ave., Rochester, N. Y.
Riverside Chem. Co., N. Tonawanda, N. Y.
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Rochester Germicide Co., 333 Hollenbeck St., Rochester 5, N. Y.
Royal Soap & Chem. Co., 511 S. Central Ave., Los Angeles
Rubon Woodfinishing & Prods. Co., 500 W. 7th St., Kansas City, Mo.
Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
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John T. Stanley Co., 642 W. 30th St., N. Y.
Superior Soap Corp., 121 Nostrand Ave., Brooklyn
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Tesco Chem. Co., P. O. Box 4748, Atlanta
Thompson-Hayward Chemical Co., Kansas City, Mo.
Trio Chem. Wks., 341 Scholes St., Bklyn.
Uncle Sam Chem. Co., 573 W. 131st St., N. Y.
U. S. Sanitary Specialties Corp., 1003 S. California Ave., Chicago 12
Warren Soap Mfg. Co., 51 Waverly St., Cambridge, Mass.
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John H. Calo Co., 19 Rector St., N. Y. 6
John A. Chew, Inc., 60 E. 42nd St., N. Y. 17
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Hygiene Products, 169 St. Cyr, Montreal, Canada
Hysan Prods. Co., 932 W. 38th Place, Chicago
Kearny Mfg. Co., Kearny, N. J.
H. Krevit & Co., 73 Welton St., New Haven, Conn.
Kwik Products Co., 451 W. 28th St., N. Y.
Lorenz Chem. Co., 135 N. 22nd Ave., Omaha
M & H Laboratories, 2705 Archer Ave., Chicago
M. Michel & Co., 90 Broad St., N. Y.
Midland Labs., Dubuque, Ia.
Multi-Clean Prods., Inc., 2277 Ford P'kway, St. Paul, Minn.
Nopco Chem. Co., Harrison, N. J.
Onyx Oil & Chem. Co., Warren & Morris Sts., Jersey City 2
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Per-Mo Products Co., 3604-B Woodland Ave., Kansas City
Philadelphia Quartz Co., Public Ledger Bldg., Phila.
Rex-Cleanwall Corp., Brazil, Ind.
Theo. B. Robertson Prods. Co.
700 W. Division St., Chicago
I. Schneid, 916 Ashby St., Atlanta, Ga.
E. B. Snyder Labs., 2137 E. Harold St., Philadelphia
Skotch Prods. Corp., 2710 Detroit Ave., Cleveland
Tech Soap Co., S. Chicago & 73rd St., Chicago
Tesco Chem. Co., P. O. Box 4748, Atlanta
Thompson-Hayward Chem. Co., Kansas City, Mo.
Transmotive Labs., 2550 S. Michigan Ave., Chicago
Trio Chem. Wks., 341 Scholes St., Bklyn.
Ultra Chem. Wks., 2 Wood St., Paterson, N. J.
Uncle Sam Chemical Co., 573 W. 131st St., N. Y. C.
U. S. Sanitary Specialties Corp., 1003 S. California Ave., Chicago 12
Universal Chem. Corp., 35 E. Market St., Akron, O.
James Varley & Sons, 1200 Switzer Ave., St. Louis
Washine-National Sands, Inc., 37-02 Northern Blvd., Long Island City
Wilco Co., 4425 Bandinni Blvd., Los Angeles
G. H. Wood & Co., Toronto, Ont., Canada
Woodlets, Inc., Portland, Pa.
Wyandotte Chemicals Corp., J. B. Ford Div., Wyandotte, Mich.
Chas. W. Young & Co., 1247 N. 26th St., Philadelphia
Zeen Chemical Co., 2000 Elm St., Cleveland 13

SADDLE SOAP

Armour & Co., 1355 W. 31st St., Chicago
Asco Chemical Co., 641 Lexington Ave., Brooklyn
Baum's Castorine Co., Rome, N. Y.
Chem. Service Co. of Balto., Howard & West Sts., Balto.
Crystal Soap & Chem. Co., 6300 State Rd., Philadelphia
Davies-Young Soap Co., Dayton, O.
James Good, Inc., 2116 Susquehanna Ave., Phila.
Harley Soap Co., Pierce & Orthodox Sts., Philadelphia
R. M. Hollingshead Corp., Camden, N. J.
Hygiene Products, 169 St. Cyr, Montreal, Canada
Hysan Prods. Co., 932 W. 38th Place, Chicago
Lorenz Chem. Co., 135 N. 32nd Ave., Omaha
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Rome Soap Mfg. Co., Rome, N. Y.
E. B. Snyder Labs., 2137 E. Harold St., Phila. 25
John T. Stanley Co., 642 W. 30th St., N. Y.
Superior Soap Corp, 121 Nostrand Ave., Brooklyn
Windsor Wax Co., 611 Newark St., Hoboken, N. J.
G. H. Wood & Co., Toronto, Ont., Canada
Woodlets, Inc., Portland, Pa.

SAL AMMONIAC (see Ammonium Chloride)

SAL SODA

(see also Dealers)

American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
John H. Calo Co., 19 Rector St., N. Y. 6
John A. Chew, 60 E. 42nd St., N. Y. 17
Church & Dwight Co., 70 Pine St., N. Y.
Diamond Alkali Co., 300 Union Commerce Bldg., Cleveland 14
E. I. du Pont de Nemours & Co., Wilmington, Del.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Mathieson Chemical Corp., 10 Light St., Balto.
Pittsburgh Plate Glass Co., Columbia Chem. Div., 5th & Bellefield, Pittsburgh 13
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Solvay Sales Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Jos. Turner & Co., Ridgefield, N. J.
Welch, Holme & Clark Co., 439 West St., N. Y.

REFINING EQUIPMENT (Glycerine)

E. B. Badger Co., 25 Pitts St., Boston
Buffalo Foundry & Machine Co., Buffalo, N. Y.
Consolidated Prods. Co., 15 Park Row, U. Y. (Used)
First Machy. Corp., 157 Hudson St., N. Y. (Used)
William Garrigue & Co., 9 S. Clinton St., Chicago
Alan Porter Lee, Inc., 81 Miller Road, Morristown, N. J.
Lancaster Iron Works, 564 S. Prince St., Lancaster, Pa.
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago (Used)
Ernest Scott & Co., Fall River, Mass.
Struthers-Wells Co., Warren, Pa.
Walter E. Simmons Co., Boston
Swenson Evaporator Co., Harvey, Ill.
Wurster & Sanger, Inc., 5201 S. Kenwood Ave., Chicago

REMELTERS

Houchin Machinery Co., Hawthorne, N. J.
Huber Machine Co., 259 46th St., Brooklyn
Lancaster Iron Works, 564 S. Prince St., Lancaster, Pa.
Patterson-Kelley Co., East Stroudsburg, Pa.
Struthers-Wells Co., Warren, Pa.
Wurster & Sanger, Inc., 5201 Kenwood Ave., Chicago

RESINS, SYNTHETIC

Alkydol Laboratories, Inc., 3242 S. 50th Ave., Cicero, Ill.
American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
Bakelite Corp., 300 Madison Ave., N. Y.
Barrett Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Crosby Chemicals, Inc., De Ridder, La.
Dow Chemical Co., Midland, Mich.
Durez Plastics & Chemicals, North Tonawanda, N. Y.
General Electric Co., Pittsfield, Mass.
General Mills, Inc., 400 2nd Ave., Minneapolis 1
Hercules Powder Co., Wilmington, Dela.
Koppers Co., Pittsburgh 19
Krumbhaar Chemicals, Inc., South Kearny, N. J.
Monsanto Chem. Co., 1700 S. 2nd St., St. Louis
Neville Co., Pittsburgh, Pa.
Pennsylvania Industrial Chemical Corp., Clairton, Pa.
Plaskon Div., Libbey-Owens-Ford Glass Co., Toledo
Reichhold Chemicals, Inc., Detroit
Reilly Tar & Chem. Corp., Indianapolis
Rohm & Haas Co., Resinous Products Div., 222 W. Washington Sq., Philadelphia
William H. Scheel, Inc., 38 Franklin St., Brooklyn
Schenectady Resins, 200 Congress St., Schenectady, N. Y.
U. S. Industrial Chemicals, Inc., Lincoln Bldg., N. Y.
Velsicol Corp., 330 E. Grand Ave., Chicago
Warwick Wax Co., 1010 44th Ave., L. I. C. 1, N. Y.

RESINS AND VARNISHES, NATURAL (see Gums)

REFRIGERATING EQUIPMENT

H. Loeb & Son., 4600 Lancaster Ave. ,Philadelphia
York Ice Machine Co., York, Pa.

RESPIRATORS

Davis Emergency Equipment Co., 55 Vandam Ave., New York
Goggle Parts Co., 1466 W. 9th St., Cleveland 13
Mine Safety Appliances Co., Braddock and Thomas Sts., Pittsburgh
Nasal Filter Co., 70 N. 5th St., Columbus, Ohio
Pulmosan Safety Equipment Corp., 644 Pacific St., Bklyn. 17
Willson Products Co., 2nd & Washington Sts., Reading, Pa.

RHODINOL (see Aromatic Chemicals)

ROACH PASTE

John Opitz, Inc., 50-14 39th St., L. I. City, N. Y.
Sennewald Drug Co., 2721 Chouteau Ave., St. Louis

ROACH POWDERS (see Household Insecticides, Powder)

ROSE OIL (see Essential Oils)

ROSEMARY OIL (see Essential Oils)

ROSIN

American Turp. Farmers Assn., Valdosta, Ga.
Antwerp Naval Stores Co., Savannah, Ga.
John H. Calo Co., 19 Rector St., N. Y. 6
E. W. Colledge, General Sales Agent, P. O. Box 389, Jacksonville, Fla.
Continental Turp. & Rosin Corp., Laurel, Miss.
Crosby Chemicals, Inc., De Ridder, La.
Dixie Pine Prods. Co., Hattiesburg, Miss. (wood)
General Mills, Chemical Div., 400 2nd Ave. Minneapolis 1
Georgia Rosin Prods. Co., Brunswick, Ga.
Glidden Co., Naval Stores Div., P. O. Box 380, Jacksonville, Fla.
Hercules Powder Co., Wilmington, Del.
Industrial Chem. Sales Div., West Va. Pulp & Paper Co., 230 Park Ave., N. Y.
Murro Chemical Co., P. O. Box 185, Asheville, N. C.
Newport Industries, Inc., 230 Park Ave., N. Y.
Phoenix Naval Stores Co., Gulfport, Miss. (wood)
Rosenthal Bercow Co., 25 E. 26th St., N. Y. 10
Southern Pine Chem. Co., Box 389, Jacksonville
Taylor, Lowenstein & Co., Mobile, Ala.
Wax & Rosin Prods., 42 Broadway, N. Y.
Welch, Holme & Clark Co., 439 West St., N. Y.
G. A. Wharry & Co., 95 Broad St., N. Y. 4

ROSIN SOAPS (Saponified Rosins)

Armour & Co., 1355 W. 31st St., Chicago 9
Boston Chem. Industries, 64 E. Brookline St., Boston 18
Chemical Mfg. & Dist. Co., Easton, Pa.
Chem. Service Co. of Balto., Howard & West Sts., Balto.
Crosby Chemicals, Inc., DeRidder, La.
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago 8
Crystal Soap & Chem. Co., 6300 State Rd., Philadelphia
Davies-Young Soap Co., Dayton 1, O.
E. F. Drew & Co., 15 E. 26th St., N. Y. 10
Essential Chems. Co., 744 N. 4th St., Milwaukee 3
James Good, Inc., 2116 E. Susquehanna Ave., Philadelphia
Haskins Bros. & Co., Omaha
Hercules Powder Co., Wilmington, Del.
National Milling & Chem. Co., 4601 Nixon St., Phila. 27
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Quaker Chemical Prods. Co., Conshohocken, Pa.
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
E. B. Snyder Labs., 2137 E. Harold St., Phila. 25
John T. Stanley Co., 642 W. 30th St., N. Y.
Trio Chem. Wks., 341 Scholes St., Bklyn 6
G. H. Wood & Co., Toronto, Ont., Canada
Woodlets, Inc., Portland, Pa.
Chas. W. Young & Co., 1247 N. 26th St., Philadelphia

ROTENONE FORMULATIONS (see also Derris)

Agicide Laboratories, 1717 Taylor Ave., Racine, Wis.
American-British Chem. Supplies, 180 Madison Ave., N. Y. 16
California Spray-Chemical Corp., Lucas & Ortho Way, Richmond, Calif.
Chipman Chem. Co., Bound Brook, N. J.
Derris, Inc., 120 Wall St., N. Y.
Hammond Paint & Chem. Co., Beacon, N. Y.
Heckathorn & Co., Richmond, Calif.
Jooster & Janssen, 132 Front St., N. Y.
Kay-Fries Chemicals, 180 Madison Ave., N. Y. 16
Lenape Trading Co., 233 Broadway, N. Y.
McCormick & Co., Baltimore, Md.
Miller Prods. Co., 1932 S. W. Water Ave., Portland, Ore.
Orbis Products Corp., 215 Pearl St., N. Y.
S. B. Penick & Co., 50 Church St., N. Y.
John Powell & Co., 1 Park Ave., N. Y.

ROTENONE FORMULATIONS (Contd.)

Prentiss Drug & Chem. Co., 110 William St., N. Y.
U. S. Indus. Chemicals, Inc., 60 E. 42nd St., N. Y.
Virginia-Carolina Chem. Corp., Richmond 8, Va.
Whitmire Research Corp., 339 Vandeventer, St. Louis

SALT (Common Salt)

(see also Dealers)

Dow Chemical Co., Midland, Mich.
International Salt Co., 475 Fifth Ave., N. Y.
LeRoy Salt Co., LeRoy, N. Y.
Michigan Chem. Corp., St. Louis, Mich.
Myles Salt Co., 1007 Camp St., New Orleans, La.
Penna. Salt Mfg. Co., Widener Bldg., Phila.
Pittsburgh Plate Glass Co., Columbia Chem. Div., 5th & Bellefield, Pittsburgh 13
Pomeroy Salt Co., Pomeroy, Ohio
Remington Salt Co., Ithaca, N. Y.
Solvay Sales Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Jos. Turner & Co., Ridgefield, N. J.
Welch, Holme & Clark Co., 439 West St., N. Y.

SALT WATER SOAP (Marine Soaps)

Antiseptol Co., 5524 Northwest Highway, Chicago
Armour Soap Wks., 1355 W. 31st St., Chicago
Chemical Service Co. of Baltimore, Howard & West Sts., Baltimore 30
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago 8
J. Eavenson & Sons, Camden, N. J.
Essential Chems. Co., 744 N. 4th St., Milwaukee 3
Hewitt Soap Co., Dayton, O.
Los Angeles Soap Co., Los Angeles
Miranol Chemical Co., 16 Melville Pl., Irvington, N. J.
Newell-Gutradt Co., San Francisco
Onyx Oil & Chem. Co., Warren & Morris Sts. Jersey City 2
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Procter & Gamble Co., Cincinnati, O.
Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
John T. Stanley Co., 642 W. 30th St., N. Y.
Swift & Co., Chicago
M. Werk Co., Cincinnati

SAMPLE CASES

Arrow Mfg. Co., 15th & Hudson Sts., Hoboken, N. J.
Knickerbocker Case Co., 2311 N. Crawford Ave., Chicago

SAND URNS

Atlas Prods. Co., 9239 S. Houston Ave., Chicago 17
Compco Corp., 2251 W. St. Paul Ave., Chicago 47
Ex-Cell Prods. Corp., 1233 S. Wabash Ave., Chicago 5
F. H. Lawson Co., 800 Evans St., Cincinnati 4, O.
Rochester Can Co., 8 Greenleaf St., Rochester 9, N. Y.

SANDALWOOD OIL (see Essential Oils)

SASSAFRAS, Artificial (see Aromatic Chemicals)

SCALES (see Weighing Equipment)

SCOURING POWDERS

American Soap & Washoline Co., Cohoes, N. Y.
Armour & Co., 1355 W. 31st St., Chicago
B. T. Babbitt, Inc., 386—4th Ave., N. Y. 16
Baum's Castorine Co., 200 Mathew St., Rome, N. Y.
Buck-Jack Co., 3056 Federal St., Baltimore
Chemical Mfg. & Distrib. Co., Easton, Pa.
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Churchill Mfg. Co, Galesburg, Ill

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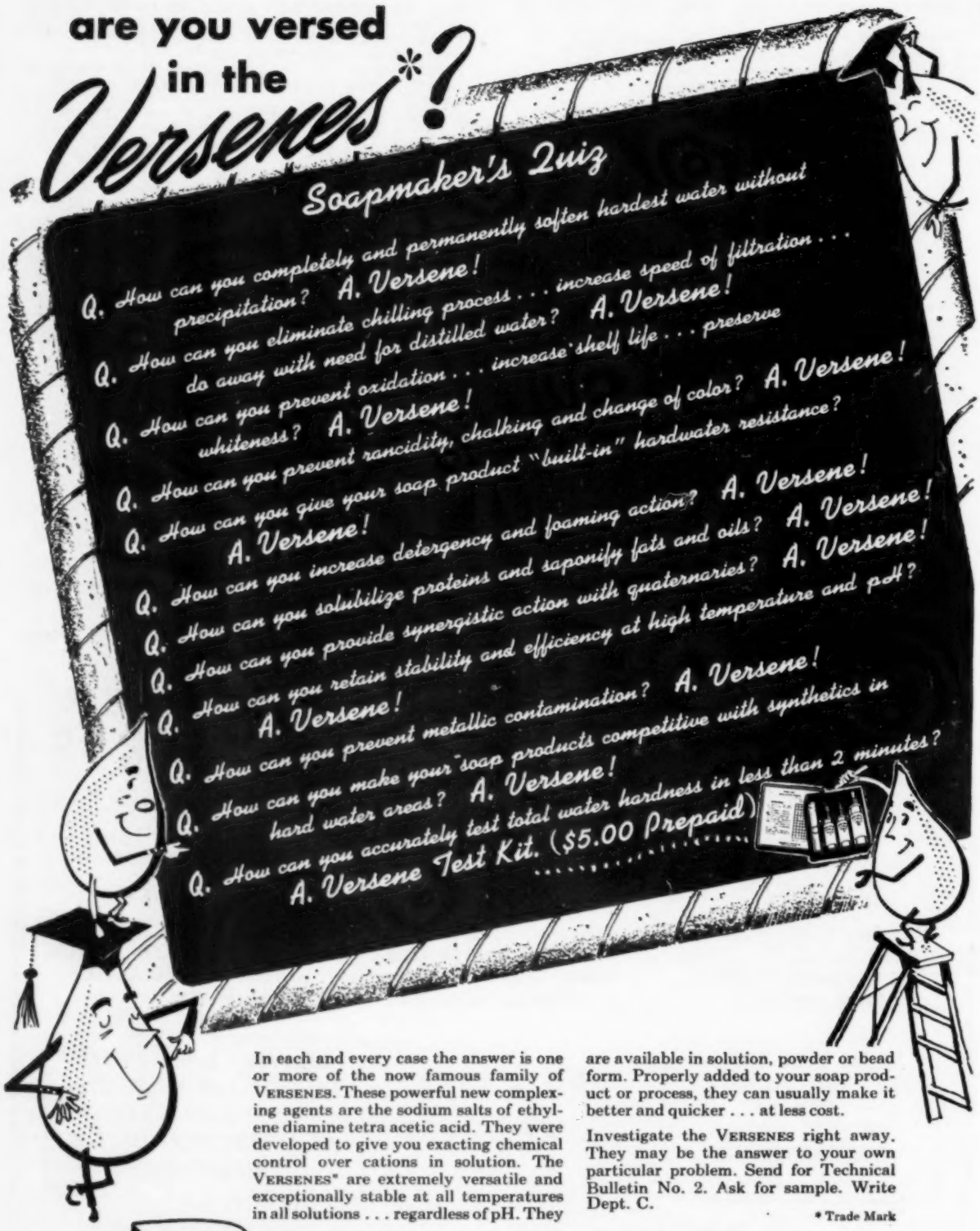
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Providence Agent: George Mann, 251 Fox Point Boulevard, Providence, Rhode Island
W. Coast Agent: Griffin Chemical Co., San Francisco, Los Angeles
Midwest Agent: Kraft Chemical Co., Inc., 917 W. 18th St., Chicago
Southern Agent: Chas. S. Tanner Co., Liberty Life Bldg., Charlotte, North Carolina

SCOURING POWDERS (Contd.)

Clarkson Co., 919 N. 9th St., Phila. 23
Colgate-Palmolive-Peet Co., Jersey City, N. J.
Cudahy Packing Co., 221 N. La Salle St., Chicago
Du Bois Soap Co., Cincinnati O.
Eagle Soap Corp., Huntington, Ind.
Essential Chems. Co., 744 N. 4th St., Milwaukee 3
Fuld Bros., 702 S. Wolfe St., Baltimore
Higley Chem. Co., Dubuque, Iowa
Hygiene Products, 169 St. Cyr, Montreal, Canada
Hysan Prods., 932 W. 38th Place, Chicago
Kearny Mfg. Co., Kearny, N. J.
Los Angeles Soap Co., 617 E. First St., Los Angeles
Midland Labs., Dubuque, Ia.
Murro Chemical Co., Asheville, N. C.
National Milling & Chem. Co., 4601 Nixon St., Phila. 24
Pacific Chem. Co., 1412 N. Main St., Los Angeles
J. C. Paul & Co., 930 Roscoe St., Chicago 13
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Penna. Salt Mfg. Co., Widener Bldg., Philadelphia
Pittsburgh Plate Glass Co., Columbia Chemical Div., 5th & Bellefield, Pittsburgh 13
Port Huron Detergent Co., Port Huron, Mich.
Procter & Gamble Co., Cincinnati
Puritan Chem. Co., 209 Peters St., S.W., Atlanta
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
E. B. Snyder Labs., 2137 E. Harold St., Philadelphia 25
Solvay Sales Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Skotch Prods. Corp., 2710 Detroit Ave., Cleveland
John T. Stanley Co., 642 W. 30th St., N. Y.
Stevens Soap Corp., 200 Sullivan St., Brooklyn
Swift & Co., Chicago
Tech Soap Co., S. Chicago & 73rd St., Chicago
Tesco Chem. Co., P. O. Box 4728, Atlanta
U. S. Sanitary Specialties Corp., 1003 S. California Blvd., Chicago 12
Virginia-Carolina Chem. Corp., Richmond 8, Va.
Warren Soap Mfg. Co., 51 Waverly St., Cambridge, Mass.
G. H. Wood & Co., Toronto, Ont., Canada
Woodlets. Inc., Portland, Pa.
Allen B. Wrisley Co., 601 W. 65th St., Chicago
Wyandotte Chemicals Corp., J. B. Ford Div., Wyandotte, Mich.
Chas. W. Young & Co., 1247 N. 26th St., Philadelphia

SCOURING SOAPS (Bars)

American Soap & Washoline Co., Cohoes, N. Y.
Armour Soap Works, 1355 W. 31st St., Chicago
Baum's Castorine Co., Rome, N. Y.
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Cudahy Packing Co., 221 N. La Salle St., Chicago
James Good, Inc., 2116 E. Susquehanna Ave., Philadelphia
Hewitt Soap Co., Dayton, O.
Kearny Mfg. Co., Kearny, N. J.
Los Angeles Soap Co., Los Angeles
Murro Chemical Co., P. O. Box 185, Asheville, N. C.
National Soap Co., P. O. Box 1631, Tacoma, Wash.
Peck's Products Co., 610 E. Clarence Ave., St. Louis
Port Huron Detergent Co., Port Huron, Mich.
Procter & Gamble Co., Cincinnati, O.
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Schmidt Soap Products Co., 236 W. North Ave., Chicago
Skotch Prods. Corp., 2710 Detroit Ave., Cleveland
John T. Stanley Co., 642 W. 30th St., N. Y.
Swift & Co., Chicago
Warren Soap Mfg. Co., 51 Waverly St., Cambridge, Mass.
Allen B. Wrisley Co., 6801 W. 65th St., Chicago
Chas. W. Young & Co., 1247 N. 26th St., Phila.

SCREENS (Screening and Sifting Equipment)

Allied Steel & Equipt. Co., Chester, N. J.
B. F. Gump Co., 1325 S. Cicero Ave., Chicago
J. H. Day Co., 1144 Harrison Ave., Cincinnati
J. M. Lehmann Co., 566 New York Ave., Lyndhurst, N. J.
Ludlow-Sayer Wire Co., St. Louis, Mo.
Orville Simpson Co., 1230 Knowlton St., Cincinnati
Simplicity Engineering Co., Durand, Mich.
Sprout, Waldron & Co., Muncy, Pa.
Stedman's Fdy. & Machine Works, Aurora, Ind.
Stephens-Adamson Mfg. Co., Aurora, Ill.
Sturtevant Mill Co., Boston, Mass.
W. S. Taylor Co., Cleveland, O.
Troy Engine & Mach. Co., Troy, Pa.
Wickwire Spencer Steel Co., 500—5th Ave., N. Y.

SCRUBBING SOAPS, LIQUID (see Floor Scrub Soaps)

SEALERS, FLOOR

Ampion Corp., 47-02 - 5th St., Long Island City, N. Y.
Candy & Co., 2515 W. 35th St., Chicago
Chemical Service Co., Baltimore
Chemical Mfg. & Dist. Co., Easton, Pa.
Chicago Sanitary Prods. Co., 3100 Throop St., Chicago
Clifton Chemical Co., 62 William St., N. Y.
Davies-Young Soap Co., Dayton, O.
Eagle Soap Corp., Huntington, Ind.
Federal Varnish Division, S. Ashland Ave. at 29th St., Chicago
Fuld Bros., 702 S. Wolfe St., Baltimore
M. & H. Laboratories, 2703 Archer Ave., Chicago
Uncle Sam Chemical Co., 573 W. 131st St., N. Y.

SEALING MACHINERY (Bags)

Allied Steel & Equipt. Co., Chester, N. J.
Bagpak, Inc., 220 E. 42nd St., N. Y. 17
Consolidated Packaging, 1400 West Ave., Buffalo 13, N. Y.
B. F. Gump Co., 1325 S. Cicero Ave., Chicago
New Jersey Machine Corp., Hoboken, N. J.
St. Regis Paper Co., 230 Park Ave., N. Y.
Stokes & Smith Co., 4915 Summerdale Ave., Philadelphia
Weigh Right Automatic Scale Co., Joliet, Ill.

SEALING MACHINERY (Cartons)

A-B-C Packaging Machy. Corp., Quincy, Ill.
Allied Steel & Equipment Co., Chester, N. J.
Arenco Mach. Co., 25 W. 43rd St., N. Y. 18
Automatic Scale Co., Box 896, Joliet, Ill.
Burt Machine Co., 401 E. Oliver St., Baltimore
Chisholm-Ryder Co. of Pa., Hanover, Pa.
Consolidated Products Co., 15 Park Row, N. Y. (Used)
J. L. Ferguson Co., Joliet, Ill.
First Machy. Corp., 157 Hudson St., N. Y. (Used)
Hornney & Co., 420 Lexington Ave., N. Y.
Houchin Machinery Co., Hawthorne, N. J.
Johnson Automatic Sealer Co., Battle Creek, Mich.
R. A. Jones & Co., Covington, Ky.
New Jersey Machine Corp., Hoboken, N. J.
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago (Used)
Perl Mach. Mfg. Co., 68 Jay St., Bklyn. 1, N. Y. (Tubes)
Pneumatic Scale Corp., North Quincy, Mass.
F. B. Redington Co., 112 S. Sangamon St., Chicago
Standard-Knapp Div., Portland, Conn.
Stokes & Smith Co., 4915 Summerdale Ave., Philadelphia
Triangle Package Machinery Co., 6633 W. Diversey Blvd., Chicago
Van Buren Mach. Co., 730 Grand St., Bklyn. 11
Weigh Right Automatic Scale Co., Joliet, Ill.

SEQUESTERING AGENTS

Alrose Chem. Co., Box 1294, Providence, R. I.
Antara Prods., Div. General Dyestuff Corp., 435 Hudson St., N. Y. 14
Atlas Powder Co., Wilmington, Del.
Bersworth Chemical Co., Framingham, Mass.
Blockson Chem. Co., Joliet, Ill.
Carbide & Carbon Chemicals, 30 E. 42nd St., N. Y. 17
Griffin Chem. Co., 1000 16th St., San Francisco
Monsanto Chem. Co., St. Louis 4

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SEQUESTERING AGENTS (Contd.)

Pittsburgh Agricultural Chem. Co., 350 Fifth Ave., N. Y. 1
Quaker Chem. Prods. Co., Conshohocken, Pa.
Refined Prods. Corp., Lyndhurst, N. J.
Rumford Chemical Wks., Rumford 16, R. I.
Solvay Sales Div., Allied Chemical & Dye Corp., 40 Rector St., N. Y. 6
Westvaco Chem. Div., Food Machy. & Chem. Corp., 415 Lexington Ave., N. Y. 17
Wyandotte Chemicals Corp., Michigan Alkali Div., Wyandotte, Mich.

SESQUICARBONATE OF SODA (for Bath Salts, etc.), (see Sodium Sesquicarbonate)

SHAMPOO BASE and LIQUID (SOAP BASE)

Ampion Corp., 4-88 47th Ave., L. I. City, N. Y.
Analab Labs., 285 Franklin St., Boston 10
Antiseptol Co., 5524 Northwest Highway, Chicago
Armour Soap Wks., 1355 W. 31st St., Chicago
Arnold Hoffman & Co., 55 Canal St., Providence, R. I.
Atlantic Refining Co., 260 S. Broad St., Phila.
Banner Chemical Prods., 60 Elm St., Newark
G. Barr & Co., 1132 W. 37th St., Chicago 9
Baum's Castorine Co., 200 Mathew St., Rome, N. Y.
Borne Scrymser Co., 632 S. Front St., Elizabeth, N. J.
Boston Chemical Industries, 64 E. Brookline St., Boston
Buckingham Wax Co., Van Dam St. & Borden Ave., L. I. City, N. Y.
Carlstadt Chem. Co., Carlstadt, N. J.
Chemical Mfg. & Dist. Co., Easton, Pa.
Chemical Compounding Corp., 262 Huron St., Bklyn, N. Y.
Chem. Service Co. of Balto., Howard & West Sts., Balto.
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Clifton Chemical Co., 62 William St., N. Y.
Connecticut Chem. Research Corp., Bridgeport 5, Conn.
James Counts Soap Co., 2nd and Washington Aves., St. Louis
Crystal Soap & Chem. Co., 6300 State Rd., Philadelphia
Davies-Young Soap Co., Dayton, O.
E. F. Drew & Co., 15 E. 26th St., N. Y. 10
Eagle Soap Corp., Huntington, Ind.
J. Eavenson & Sons, Camden, N. J.
Emulsol Corp., 59 E. Madison St., Chicago
Essential Chems. Co., 744 N. 4th St., Milwaukee
Fairfield Labs., Inc., 417 Cleveland Ave., Plainfield, N. J.
Fine Organics, Inc., 211 E. 19th St., N. Y. 3
Fuld Bros. 702 S. Wolfe St., Baltimore
Gaylord Chem. Co., 701 Woodswether Rd., Kansas City
James Good, Inc., 2116 Susquehanna Ave., Phila.
Haag Laboratories, Inc., 140th & Seeley Ave., Blue Island, Ill.
Higley Chemical Co., Dubuque, Iowa
R. M. Hollingshead Corp., Camden, N. J.
Harley Soap Co., Pierce & Orthodox Sts., Phila.
Hewitt Soap Co., Dayton, O.
Hygiene Prods., 169 St. Cyr, Montreal, Canada
Hysan Prods. Co., 932 W. 38th Place, Chicago
Kearny Mfg. Co., Kearny, N. J.
Kessler Chem. Co., State Rd., Phila. 35
Knoxall Corp., 1005 E. Sumner Ave., Indianapolis, Ind.
Kranich Soap Co., 60 Richards St., Brooklyn
H. Krevit & Co., 73 Welton St., New Haven, Conn.
Lanair Chem. Corp., 236 W. North Ave., Chicago 10
Los Angeles Soap Co., 617 E. First St., Los Angeles
Manhattan Kreole Prods., 172 N. 10th St., Brooklyn
M. Michel & Co., 90 Broad St., N. Y.
Midland Labs., Dubuque, Ia.
Miranol Chem. Co., 16 Melville Pl., Irvington, N. J.
Napthole, Inc., 15 E. 26th St., N. Y.
Nopco Chem. Co., Harrison, N. J.
N. Y. Soap Co., 258 Third St., Brooklyn
Oil-Kraft, Inc., 3330 Beekman St., Cincinnati
Onyx Oil & Chem. Co., Warren & Morris Sts., Jersey City 2
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Quaker Chem. Prods. Co., Conshohocken, Pa.
Refined Prods. Corp., Lyndhurst, N. J.
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Robinson Wagner Co., 110 E. 42nd St., N. Y.

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75 WEST ST.
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CLIFTON PRODUCTS

SOAP DISPENSERS

SOAPS... Liquid... Soft

DEODORIZING CAKES

DISINFECTANTS...

SYNTHETIC DETERGENTS
Powder... Paste... Liquid

... for liquid or powders
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DUODEK DISPENSER

A sturdy, economical liquid soap dispenser — simple and attractive.

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Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
Schaeffer Mfg. Co., 102 Barton St., St. Louis
Schmidt Soap Products Co., 236 W. North Ave., Chicago
Sharples Chemicals, Inc., 123 S. Broad St., Phila. 9
E. B. Snyder Labs., 213 E. Harold St., Phila. 25
L. Sonneborn Sons, 300—4th Ave., N. Y. 10
John T. Stanley Co., 624 W. 30th St., N. Y.
Superior Soap Corp., 121 Nostrand Ave., Bklyn, N. Y.
Swift & Co., Chicago 9
Tech Soap Mfg. Co., S. Chicago Ave., & 73rd St., Chicago
Tesco Chem. Co., P. O. Box 4748, Atlanta
Thompson-Hayward Chem. Co., Kansas City, Mo.
Trio Chem. Wks., 341 Scholes St., Bklyn.
Ultra Chem. Wks., 2 Wood St., Paterson, N. J.
Uncle Sam Chemical Co., 573 W. 131st St., N. Y. C.
U. S. Industrial Chemicals, 60 E. 42 St., N. Y. 17
U. S. Sanitary Specialties Corp., 1003 S. California Ave., Chicago 12
Warren Soap Mfg. Co., 51 Waverly St., Cambridge, Mass.
Warwick Wax Co., 10-10 44th Ave., L. I. C., N. Y.
G. H. Wood & Co., Toronto, Canada.
Woodlets, Inc., Portland, Pa.
Allen B. Wrisley Co., 6801 W. 65th St., Chicago
Chas. W. Young & Co., 1247 N. 26th St., Phila.

SHAMPOOS, POWDER AND CAKE

Armour & Co., 1335 W. 31st St., Chicago
Arrow Laboratories, 236 W. North Ave., Chicago
Chicago Sanitary Prods., Co., 3100 S. Throop St., Chicago
Davies-Young Soap Co., Dayton, O.
Emulsol Corp., 59 E. Madison St., Chicago
Kranich Soap Co., 60 Richards St., Brooklyn
Lanair Chem. Corp., 236 W. North Ave., Chicago
Lightfoot Schultz Co., 1412 Park Ave., Hoboken, N. J.
North Coast Chem. & Soap Wks., Seattle, Wash.
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Piatt & Smillie Chemicals, 2329 Pine St., St. Louis 3
John Powell & Co., 1 Park Ave., N. Y.
Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
Schmidt Soap Products Co., 236 W. North Ave., Chicago
Superior Soap Corp., 121 Nostrand Ave., Bklyn, N. Y.
Swift & Co., Chicago 9
Warren Soap Mfg. Co., 51 Waverly St., Cambridge, Mass.
Allen B. Wrisley Co., 6801 W. 65th St., Chicago

SHAMPOOS, SOAPLESS

Alrose Chem. Co., Box 1294, Providence, R. I.
Analab Labs., 285 Franklin St., Boston 10
Atlantic Refining Co., 260 S. Broad St., Phila.
G. Barr & Co., 1132 W. 37th St., Chicago 9
Boston Chemical Industries, 64 E. Brookline St., Boston
Carlstadt Chem. Co., Carlstadt, N. J.
Chem. Service Co. of Balto., Howard & West Sts., Balto.
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago 8
Davies-Young Soap Co., Dayton, O.
Emulsol Corp., 59 E. Madison St., Chicago
Essential Chems. Co., 744 N. 4th St., Milwaukee 3
Fairfield Labs., Inc., 417 Cleveland Ave., Plainfield, N. J.
Fuld Bros., 702 S. Wolfe St., Baltimore
Higley Chemical Co., Dubuque, Iowa
R. M. Hollingshead Corp., Camden, N. J.
Hysan Prods. Co., 932 W. 38th Place, Chicago
Kearny Mfg. Co., Kearny, N. J.
Knoxall Corp., 1005 E. Sumner Ave., Indianapolis, Ind.
Los Angeles Soap Co., 617 E. First St., Los Angeles
M. Michel & Co., 90 Broad St., N. Y.
Miranol Chemical Co., 16 Melville Pl., Irvington, N. J.
Monsanto Chem. Co., 1700 S. 2nd St., St. Louis
Nopco Chem. Co., Harrison, N. J.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Protean Chemical Corp., 156 Nassau St., N. Y. 7
Rohm & Haas Co., 222 W. Washington Sq., Phila.
Sherwood Refining Co., Englewood, N. J.
Skotch Prods. Corp., 2710 Detroit Ave., Cleveland
E. B. Snyder Labs., 2137 E. Harold St., Philadelphia
Stepan Chem. Co., 1353 N. Branch St., Chicago 22
Ultra Chem. Wks., 2 Wood St., Paterson, N. J.
U. S. Sanitary Spec. Corp., 1003 S. California Ave., Chicago 12
Verona Chem. Co., 26 Verona Ave., Newark, N. J.

SHAVING CREAM (Soap and Brushless)

Analab Labs., 285 Franklin St., Boston 10
Cenol Co., 4250 N. Pulaski Ave., Chicago
Connecticut Chem. Research Corp., Bridgeport 5, Conn.
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago 8
Davies-Young Soap Co., Dayton 1, O.
Eagle Soap Corp., Huntington, Ind.
Lightfoot Schultz Co., 1412 Park Ave., Hoboken, N. J.
Schmidt Soap Products Co., 236 W. North Ave., Chicago
John T. Stanley Co., 642 W. 30th St., N. Y.
Allen B. Wrisley Co., 6801 W. 65th St., Chicago

SHAVING CREAM BASE

Antara Prods., Div., General Dyestuff Corp., 435 Hudson St., N. Y.
E. F. Drew & Co., 15 E. 26th St., N. Y. 10
W. C. Hardesty Co., 41 E. 42nd St., N. Y. 17
Kessler Chem. Co., State Rd., Phila. 35
Miranol Chemical Co., Irvington, N. J.
Refined Prods. Corp., Lyndhurst, N. J.
Robinson Wagner Co., 110 E. 42nd St., N. Y.
Schmidt Soap Products Co., 236 W. North Ave., Chicago
U. S. Industrial Chems., Inc., 60 E. 42nd St., N. Y.
Allen B. Wrisley Co., 6801 W. 65th St., Chicago

SHAVING SOAP (Cake, Stick, Powder, Lather)

Arrow Laboratories, 236 W. North Ave., Chicago
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago 8
Colgate-Palmolive-Peet Co., Jersey City, N. J.
Connecticut Chem. Research Corp., Bridgeport 5, Conn.
J. Eavenson & Sons, Del. and Penn Sts., Camden, N. J.
Hewitt Soap Co., Dayton, O.
Lanair Chem. Corp., 236 W. North Ave., Chicago
Lightfoot Schultz Co., 1412 Park Ave., Hoboken, N. J.
Los Angeles Soap Co., Los Angeles
Procter & Gamble Co., Cincinnati
Schmidt Soap Products Co., 236 W. North Ave., Chicago
John T. Stanley Co., 642 W. 30th St., N. Y.
Allen B. Wrisley Co., 6801 W. 65th St., Chicago

SILICA

California Industrial Minerals Co., Friant, Calif.
Chas. B. Chrystal Co., 53 Park Pl., N. Y.
Dicalite Div., 612 S. Flower St., Los Angeles, Calif.
E. I. du Pont de Nemours Co., Wilmington, Del.
K. F. Griffiths & Co., 110 E. 42nd St., N. Y.
Harshaw Chem. Co., Cleveland
Heckathorn & Co., Richmond, Calif.
Illinois Silica Co., Cairo, Ill.
Innis, Speiden & Co., 117 Liberty St., N. Y.
International Silica Co., Cairo, Ill.
Johns-Manville Corp., 22 E. 40th St., N. Y.
Pennsylvania Pulverizing Co., Lewiston, Pa.
Rosenthal Bercow Co., 25 E. 26th St., N. Y. C.
L. A. Salomon & Bro., 216 Pearl St., N. Y.
Silica Prods. Co., 700 Baltimore Ave., Kansas City, Mo.
Tamms Industries, Inc., 228 N. LaSalle St., Chicago
Chas. A. Wagner Co., 813 Callowhill St., Phila.
Whittaker, Clark & Daniels, 260 W. Bway., N. Y.
Witco Chemical Co., 295 Madison Ave., N. Y.

SHELLAC

Bradshaw Praeger & Co., 3248 W. 47th Place, Chicago
Wm. Diehl & Co., 336 W. 42nd St., N. Y. 18
Gillespie-Rogers-Pyatt Co., 75 West St., N. Y.

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George H. Lincks, 312 Bridge St., Bklyn. 1
Mac-Lac Co., Inc., 127 Maiden Lane, N. Y.
Mantrose Corp., 136 41st St., Brooklyn, N. Y.
Rosenthal Bercow Co., 25 E. 26th St., N. Y. 10
Schwab Bros. Corp., 102 Maiden Lane, N. Y.
Wm. Zinsser & Co., 516 W. 59th St., N. Y.

SHOE POLISHES (Leather Dressings) For The Trade

Asco Chemical Co., 641 Lexington Ave., Bklyn.
Chemical Service Co. of Baltimore, Balto.
James Good, Inc., 2116 Susquehanna Ave., Phila.
R. M. Hollingshead Corp., Camden, N. J.
H. F. Staples Co., Medford, Mass.
Windsor Wax Co., 611 Newark St., Hoboken, N. J.

SHOE POLISH DAUBERS

Alba Cook Co., Jersey City, N. J.
American Cork Specialty Co., 115 Sutton St., Bklyn., N. Y.
Applicator Brush Co., 87 Frankfort St., N. Y.
Applicator Co., 1512 Atlantic Ave., Bklyn., N. Y.
Armstrong Cork Co., Lancaster, Pa.

SHEEP DIPS (see Cattle Dips)

SIFTER TOP CANS (see Cans, Sifter Top)

SIFTING EQUIPMENT (see Screens)

SILICO FLUORIDES (see Sodium Silicofluoride)

SILICONES

Dow-Corning Corp., Midland, Mich.
General Electric Co., Pittsfield, Mass.
Plaskon Division, Libby-Owens-Ford Glass Co., Toledo 6, O.

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SOAP BOOKS (see Soap Paper)

SOAP, CASTILE (see Castile Soap)

SOAP, CHIP (see Chip Soap)

SOAP CUTTERS (see Soap Machinery)

SOAP DIES

Anthony J. Fries & Son Co., 717 Sycamore St., Cincinnati
Houchin Machinery Co., Hawthorne, N. J.
Huber Machine Co., 259 46th St., Brooklyn, N. Y.
R. A. Jones & Co., Covington, Ky.
Jas. H. Matthews & Co., 3942 Forbes St., Pittsburgh
Newman Tallow & Soap Machy. Co., 1051 W. 36th St., Chicago
I. Schwartz Engraving & Die Works, 38 W. 21st St., N. Y.

SOAP DISPENSERS (Liquid)

Ampion Corp., 4-88 47th Ave., L. I. City, N. Y.
American Dispenser Co., 115 E. 23rd St., N. Y. 10
Antiseptol Co., 5524 Northwest Highway, Chicago

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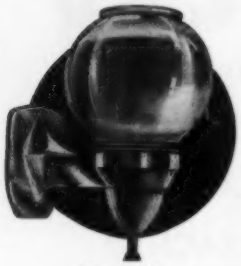
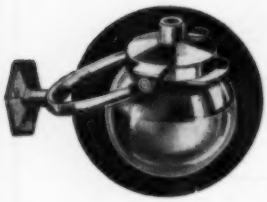
BRyant 9-5211

Below are a few of the soap dispensers manufactured by Moore Bros. Co.

MOORE
SOAP DISPENSERS
WIN HANDS DOWN



No. 100



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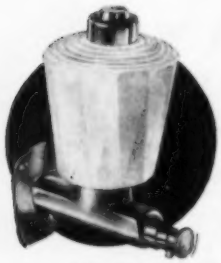

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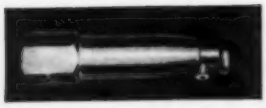
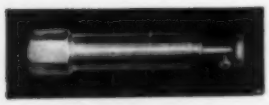


No. 600



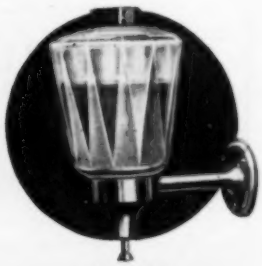
No. 650

Moore Bros. Co. backs up your soap sales with more than half a century of service. Now that shortages have curtailed basic materials, it's important to rely on a name known for high standards in design, workmanship, and materials.

Moore soap dispensers have a reputation for durability and *dependability* throughout the world.

Swing into BIGGER Sales with *Moore's* liquid, lather, and powder soap dispensers. There's a type for any installation.

PEER #50



No. 200

No. 400

No. 500

MOORE BROS. COMPANY

100 WARREN STREET
NEW YORK 7, N. Y.

SOAP DISPENSERS (Liquid) (Contd.)

Bobrick Mfg. Corp., 1841 Blake Ave., Los Angeles 39
Chemical Service Co. of Baltimore, Balto. 30
Century Vitreous Enamel Co., 6641 S. Narragansett Ave., Chicago
Clifton Chemical Co., 62 William St., N. Y.
Eagle Soap Corp., Huntington, Ind.
Fuld Bros., 702 S. Wolfe St., Baltimore
Garnet Chem. Corp., 911 N. Lumber St., Allentown, Pa.
Hysan Prods. Co., 932 W. 38th Place, Chicago
Imperial Bross Co., 1200 W. Harrison St., Chicago
Moore Bros. Co., 100 Warren St., N. Y.
National Soap Dispenser Co., 10210 La Salle Ave., Los Angeles 47 (Paste)
Ped-O-Flo Co., Waverly, Iowa
Palmer Fixture Co., Waukesha, Wisc.
Royal Soap & Chem. Co., 3486 Union Pacific Ave., Los Angeles (Paste)
Uncle Sam Chemical Co., 573 W. 131st St., N. Y. C.
U. S. Sanitary Specialties Corp., 1003 S. California Ave., Chicago 12
Vestal, Inc., 4963 Manchester St., St. Louis 10
G. H. Wood & Co., Toronto, Ont., Canada

SOAP DISPENSERS (Powder)

Ace Dispenser Co., 269 E. Genesee St., Buffalo, N. Y.
Ampion Corp., 4-88 47th Ave., L. I. City, N. Y.
American Dispenser Co., 115 E. 23rd St., N. Y. 10
Bobrick Mfg. Corp., 1841 Blake Ave., Los Angeles 39
Century Vitreous Enamel Co., 6641 S. Narragansett Ave., Chicago
Chemical Service Co. of Baltimore, Balto. 30
Clifton Chemical Co., 62 William St., N. Y.
Federal Tool Corp., 3600 W. Pratt Blvd., Chicago 45
Fuld Bros., 702 S. Wolfe St., Baltimore
Hysan Prods. Co., 932 W. 38th Place, Chicago
Imperial Brass Co., 1200 W. Harrison St., Chicago
Moore Bros. Co., 100 Warren St., N. Y.
Packwood Mfg. Co., St. Louis
Palmer Fixture Co., Waukesha, Wisc.
Presto Mfg. Co., 770 Cromwell Ave., St. Paul, Minn.
Skotch Prods. Corp., 2710 Detroit Ave., Cleveland
Sugar Beet Prods. Co., Saginaw, Mich.
Uncle Sam Chemical Co., 573 W. 131st St., N. Y. C.
U. S. Sanitary Specialties Corp., 1003 S. California Ave., Chicago 12
Vasco Products Co., Elmira, N. Y.
G. H. Wood & Co., Toronto, Ont., Canada
Woodlets, Inc., Portland, Pa.

SOAP DISPENSING SYSTEMS (Multi-unit with Tanks)

Ampion Corp., 4-88 47th Ave., L. I. City, N. Y.
Antiseptol Co., 5524 Northwest Highway, Chicago
American Dispenser Co., 115 E. 23rd St., N. Y. 10
Bobrick Mfg. Corp., 1841 Blake Ave., Los Angeles 39
Clifton Chemical Co., 62 William St., N. Y.
Eagle Soap Corp., Huntington, Ind.
R. M. Hollingshead Corp., Camden, N. J.
Imperial Brass Co., 1200 W. Harrison St., Chicago
Hysan Prods. Co., 932 W. 38th Place, Chicago
Moore Bros. Co., 100 Warren St., N. Y.
Palmer Fixture Co., Waukesha, Wis.
Spraying Systems Co., 3217 Randolph St., Bellwood, Ill.
Uncle Sam Chemical Co., 575 W. 131st St., N. Y. 27
U. S. Sanitary Specialties Corp., 1003 S. California Ave., Chicago 12
West Disinfecting Co., Long Island City, N. Y.
G. H. Wood & Co., Toronto, Ont., Canada
Woodlets, Inc., Portland, Pa.

SOAP DRYERS (see Dryers)

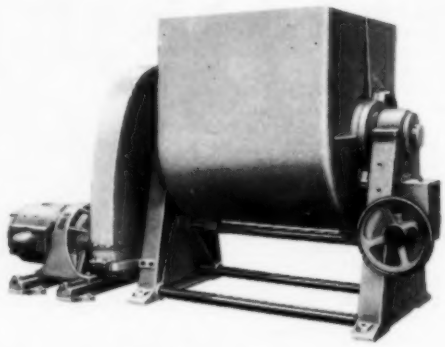
Dependable Dispensers Since 1906

Bobrick has a soap dispenser for every need...and every dispenser carries a performance guarantee. For the Jobbers' convenience complete local stocks are carried in New York, Chicago, Atlanta, Dallas and Los Angeles. Jobbers throughout the U. S. A. and Canada save time and save shipping costs when ordering Bobrick Dispensers – write for address of your nearest Jobber supply center.

Write for NEW **Bobrick** Catalog No. 46d and Jobber's Price List with "Profit Hints"

Bobrick MANUFACTURING CORPORATION
1841 BLAKE AVENUE, LOS ANGELES 39, CALIF.
BROOKLYN, N. Y. CHICAGO, ATLANTA, DALLAS AND LOS ANGELES

• Lehmann 400 lb. Bottom Dump Amalgamator Model 40G-B. Furnished in plain or stainless steel.



• Lehmann 260-400 lb. Tilting Type Amalgamators. Furnished in plain or stainless steel.

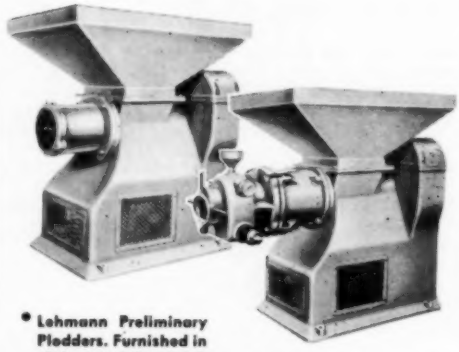
MAKE THE MOST OF LIMITED MAN-POWER WITH LEHMANN SOAP FINISHING MACHINES

OUR man-power pool is the key to the success of America's defense effort. Don't waste man-hours with inefficient equipment. A good man on a good machine can often turn out several times the output of a good man on a not-so-good machine.

Much of the production machinery in American factories today can be classified as "not-so-good." Have you asked yourself the question: "Would the purchase of better machinery at this time enable us to increase the efficiency of available man-power?"

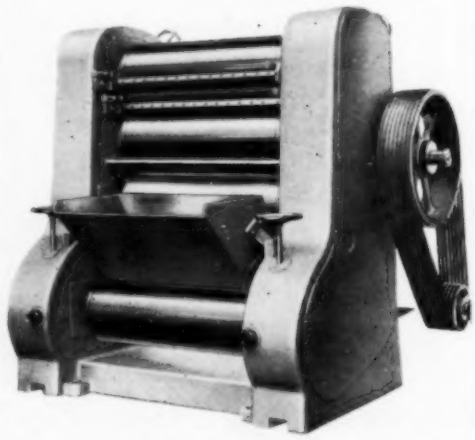
In addition to considering new equipment, do not overlook the possibility of recapturing new machine efficiency by a thorough factory reconditioning of older units.

Send for descriptive bulletin of any machine shown here or ask us about the possibilities of factory reconditioning.



• Lehmann Preliminary Pladders. Furnished in plain or stainless steel. Worm sizes 8" to 14".

• Lehmann Finishing Pladders. Furnished in plain or stainless steel. Worm sizes 8" to 14".



• Lehmann 912-SA Five Roll Finishing Mill—Flake or toilet soap. Full line available.

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SOAP, FLAKE (see Chip Soap)

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Houchin Machinery Co., Hawthorne, N. J.
Huber Machine Co., 259 49th St., Brooklyn
Littleford Bros., 451 E. Parl St., Cincinnati
Newman Tallow & Soap Mach. Co., 1051 W. 35th St., Chicago

SOAP KETTLES

Allied Steel & Equipt. Co., Chester, N. J.
Alloy Prods. Corp., 221 Madison St., Waukesha, Wis.
Alsop Engineering Corp., 103 Green St., Milldale, Conn.
Aluminum Co. of America, Gulf Bldg., Pittsburgh
Bethlehem Foundry & Mach. Co., Grand Cent. Bldg., N.Y.
S. Blickman, Inc., 72 Gregory Ave., Weehawken, N. J.
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
J. H. Day Co., 1444 Harrison Ave., Cincinnati
Edge Moor Iron Wks., 30 Rockefeller Plaza, N. Y.
Filter Paper Co., 2464 S. Michigan Ave., Chicago
First Machy. Corp., 157 Hudson St., N. Y. (Used)
Houchin Machinery Co., Hawthorne, N. J.
Huber Machine Co., 259—46th St., Brooklyn
Industrial Process Engineers, 8 Lister Ave., Newark 5, N. J.
Lancaster Iron Works, 564 S. Prince St., Lancaster, Pa.
Littleford Bros., 443 E. Pearl St., Cincinnati
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago
Patterson-Kelley Co., East Stroudsburg, Pa.
Perry Equipment Corp., 1519 W. Thompson St., Phila. (Used)
Pfaudler Co., 89 East Ave., Rochester, N. Y.
H. K. Porter Co., 49th and Harrison Sts., Pittsburgh
Project Fabrication Corp., 39 Broadway, N. Y. 6
Read Machy. Div., York, Pa.
Geo. G. Rodgers Co., 225 W. 34th St., N. Y.
Chas. Ross & Son Co., 148 Classon Ave., Brooklyn 5
Sowers Mfg. Co., 1296 Niagara St., Buffalo, N. Y.
F. J. Stokes Mach. Co., Philadelphia, Pa.
Struthers-Wells Co., Warren, Pa.
Stuart & Peterson Co., Burlington, N. J.
H. B. Trout Co., 240 Ohio St., Buffalo, N. Y.

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Allied Steel & Equipment Co.. Chester, N. J.
Buhler Bros., Inc., 2121 State Highway No. 4, Fort Lee, N. J.
Houchin Machinery Co., Hawthorne, N. J.
Huber Machine Co., 259—46th St., Brooklyn
Industrial Process Engineers, 8 Lister Ave., Newark 5, N. J.
J. M. Lehmann Co., 566 New York Ave., Lyndhurst, N. J.
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago
H. K. Porter Co,. 49th and Harrison Sts., Pittsburgh
Read Machy. Div., York, Pa.
Chas. Ross & Son Co., 148 Classon Ave., Bklyn. 5
Sharp Bros., 201 Orient St., Bayonne, N. J. (Cutters)

SOAP PAPER (Soap Sheets, Soap Pads, Soap Books—also Soap Cloth)

Charles F. Hubbs & Co., 383 Lafayette St., N. Y.
Moore Bros. Co., 100 Warren St., N. Y.
Rosefelt Sale Builders, 740 N. Plankinton Ave., Milwaukee, Wisc.
Velso Products Co., Ottumwa, Iowa

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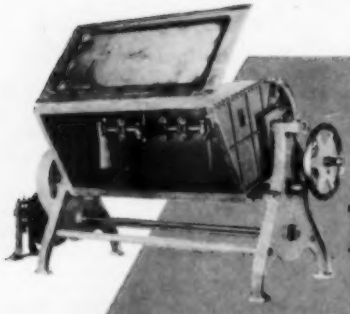

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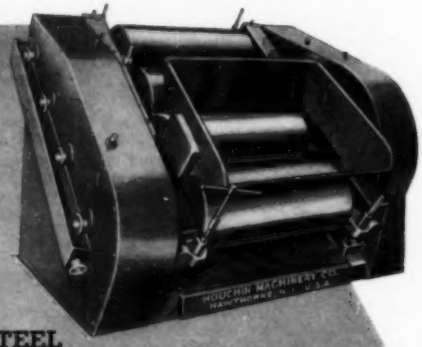

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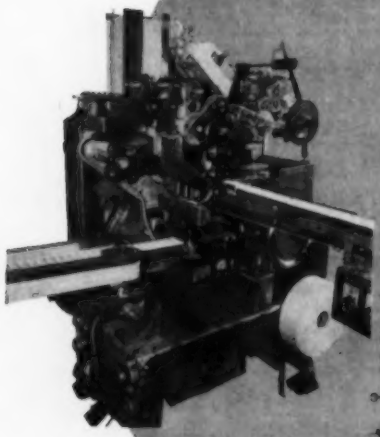

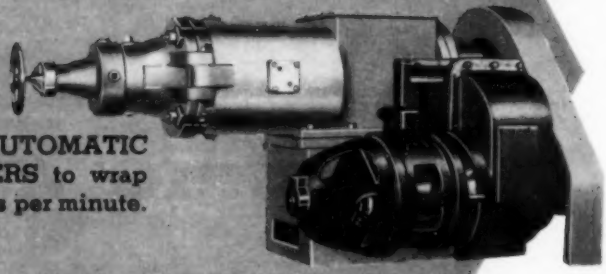

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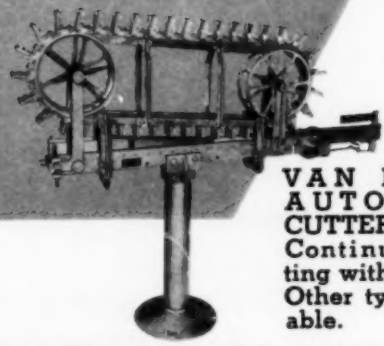

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Charles Ross & Son Co., 148 Classon Ave., Bklyn. 5
Troy Engine & Mach. Co., Troy, Pa.
Vickers-Armstrong, Ltd., Broadway, London, England

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E. I. du Pont de Nemours & Co., Wilmington, Dela. (Methylation Process)
Emery Industries, Carew Tower, Cincinnati, O. (High Pressure Saponification Process)
Refining Unincorporated, 70 W. 40th St., N. Y. 18
Sharples Corp., 23rd & Westmoreland Sts., Phila. 40 (Process Employing Centrifugals for the Production of Neat Soap)

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Abbe Engineering Co., 50 Church St., N. Y.
Consolidated Products Co., 15 Park Row, N. Y. (Used)
First Machy. Corp., 157 Hudson St., N. Y. (Used)
Houchin Machinery Co., Hawthorne, N. J.
Huber Machine Co., 359 46th St., Brooklyn, N. Y.
J. M. Lehmann Co., 566 New York Ave., Lyndhurst, N. J.
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Albert Albek, Inc., 3573 Hayden Ave., Culver City, Calif.
Allondon, Inc., 912 Broadway, N. Y.
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Aromatic Products, Inc., 15 E. 30th St., N. Y.
Aroscent, Inc., Main & Chestnut Sts., Dobbs Ferry, N. Y.
Berje Prods. Co., 616 W. 44th St., N. Y. 18
Centflor Mfg. Co., 243 W. 67th St., N. Y.
Ph. Chaleyer, Inc., 160 E. 56th St., N. Y.
Antoine Chiris Co., Inc., 119 W. 57th St., N. Y.
Compagnie Parento, Croton-on-Hudson, N. Y.
Dodge & Olcott, Inc., 180 Varick St., N. Y.
Dow Chemical Co., Bush Aromatics Div., 629 Grove St., Jersey City 2
P. R. Dreyer, Inc., 117½ W. 19th St., N. Y.
E. I. du Pont de Nemours & Co., Wilmington, Del.
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Fleuroma, Inc., 73 Sullivan St., N. Y.
Florasynth Labs., 1513 Olmstead Ave., Bronx, N. Y.
Benj. French, Inc., 160 5th Ave., N. Y.
Fritzsche Bros., Inc., 76 Ninth Ave., N. Y.
Givaudan-Delawanna, Inc., 330 W. 42nd St., N. Y.
Gunning & Gunning, 601 W. 26th St., N. Y.
D. W. Hutchinson & Co., 162 Front St., N. Y.
Samuel Klein, 4 Hanover Sq., N. Y. 4
E. M. Laning Co., 433 Stuyvesant Ave., Irvington, N. J.
Lautier Fils, 321 Fifth Ave., N. Y.
Geo. Lueders & Co., 427 Washington St., N. Y.
Magnus, Mabee & Reynard, 16 Desbrosses St., N. Y.
Monsanto Chem. Co., St. Louis 4
Naugatuck Aromatics, 254 Fourth Ave., N. Y.
New York Aromatics Co., 5 Beekman St., N. Y.
Norda Essential Oil & Chem. Co., 601 W. 16th St., N. Y.
Noville Essential Oil Co., 157 Cedar St., N. Y.
Orbis Products Corp., 215 Pearl St., N. Y.
S. B. Penick & Co., 50 Church St., N. Y.
Perry Bros., Inc., 220 Flushing Ave., Brooklyn
Polak & Schwartz, Inc., 667 Washington St., N. Y.
Polak's Frutal Works, 33 Sprague Ave., Middletown, N. Y
F. Ritter & Co., 4001 Goodwin Ave., Los Angeles 39
Roubechez, Inc., 8 E. 12th St., New York
Roure-Dupont, Inc., 366 Madison Ave., N. Y.

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Schimmel & Co., 601 W. 26th St., N. Y.
Tennessee Eastman Corp., Kingsport, Tenn.
Seeley & Co., 136 Liberty St., N. Y.
Sparhawk Co., Sparkill, N. Y.
Synfleur Scientific Labs., Monticello, N. Y.
Syntomatic Corp., 114 E. 32nd St., N. Y.
Tombarel Prods. Corp., 12 E. 22nd St., N. Y.
Ungerer & Co., 161 Sixth Ave., N. Y.
van Ameringen-Haebler, Inc., 521 W. 57th St., N. Y. 19
Van Dyk & Co., Belleville, N. J.
Albert Verley, Inc., 440 W. Superior St., Chicago
Verona Chem. Corp., 26 Verona Ave., Newark, N. J.

SOAP PLANTS (Engineering)

Alan Porter Lee, 81 Miller Road, Morristown, N. J.
J. W. McCutcheon, 475 Fifth Ave., N. Y.
Project Construction Corp., 39 Broadway, N. Y. 6
Wurster & Sanger, 5201 S. Kenwood Ave., Chicago

SOAP, POWDERED (White neutral powdered soap, powdered castile soap, etc., 95-99 per cent anhydrous soap. Do not confuse with Soap Powders.)

Armour Soap Wks., 1355 W. 31st St., Chicago
Chem. Mfg. & Dist., Co., Easton, Pa.
Colgate-Palmolive-Peet Co., Jersey City, N. J.
E. F. Drew & Co., 15 E. 26th St., N. Y. 10
Eagle Soap Corp., Huntington, Ind.
J. Eavenson & Sons, Camden, N. J.
General Biochemicals, Inc., Chagrin Falls, Ohio
Hygiene Products, 169 St. Cyr, Montreal, Canada
Insto Co., 110 Center St., Los Angeles
Kranich Soap Co., 60 Richards St., Brooklyn, N. Y.
Lightfoot Schultz Co., 1412 Park Ave., Hoboken, N. J.
Murro Chemical Co., Asheville, N. C.
National Southern Products, 630 Fifth Ave., N. Y. 20
Nopco Chemical Co., Harrison, N. J.
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
S. B. Penick & Co., 50 Church St., N. Y.
John Powell & Co., 1 Park Ave., N. Y.
Prentiss Drug & Chem. Co., 110 William St., N. Y.
Schmidt Soap Products Co., 236 W. North Ave., Chicago
Swift & Co., Chicago 9
Tennessee Soap Co., 1702 N. Thomas Ave., Memphis 1, Tenn.
Warren Soap Mfg. Co., 51 Waverly St., Cambridge, Mass.
G. H. Wood & Co., Toronto, Ont., Canada
Allen B. Wrisley Co., 6801 W. 65th St., Chicago

SOAP POWDERS
(Do not confuse with pure powdered soaps)

American Soap & Washoline Co., Cohoes, N. Y.
Armour Soap Wks., 1355 W. 31st St., Chicago
Baums Castorine Co., 200 Mathew St., Rome, N. Y.
Beach Soap Co., Lawrence, Mass.
Chicago Sanitary Prods., Co., 3100 S. Throop Ave., Chicago 8
Cowles Chemical Co., 7016 Euclid Ave., Cleveland
Chemical Mfg. & Dist. Co., Easton, Pa.
Cudahy Packing Co., 221 N. La Salle St., Chicago
E. F. Drew & Co., 15 E. 26th St., N. Y. 10
Du Bois Soap Co., Cincinnati
J. Eavenson & Sons, Camden, N. J.
Essential Chems. Co., 744 N. 4th St., Milwaukee
Gaylord Chem. Co., 701 Woodswether Rd., Kansas City
General Biochemicals, Inc., Chagrin Falls, Ohio
Hewitt Soap Co., Dayton, O.
R. M. Hollingshead Corp., Camden, N. J.
Klix Chem. Co., 2460 Third St., San Francisco
H. Kohnstamm & Co., 91 Park Pl., N. Y.
Los Angeles Soap Co., 617 E. First St., Los Angeles
Geo. E. Marsh Co., 200 Broadway, Cambridge, Mass.
Midland Laboratories, Dubuque, Iowa
Miranol Chem. Co., 16 Melville Pl., Irvington, N. J.
Murro Chemical Co., Asheville, N. C.
National Southern Products, 630 5th Ave., N. Y. 20
Napthole, Inc., 15 E. 26th St., N. Y.

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North Coast Soap & Chem. Wks., Seattle, Wash.
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Phipps Products Co., 30 Huntington Ave., Boston
Port Huron Detergent Co., Port Huorn, Mich.
Procter & Gamble Co., Cincinnati
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
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Skotch Prods. Corp., 2710 Detroit Ave., Cleveland
Stevens Soap Corp., 200 Sullivan St., Brooklyn
John T. Stanley Co., 642 W. 30th St., N. Y.
Swift & Co., Union Stock Yards, Chicago
Tennessee Soap Co., 1702 N. Thomas Ave., Memphis 1, Tenn.
U. S. Sanitary Specialties Corp., 1001 S. California Blvd., Chicago 12
Vliet Soap Co., 638 Monroe St., Brooklyn
Warren Soap Mfg. Co., 51 Waverly St., Cambridge, Mass.
M. Werk Co., St. Bernard, Cincinnati
G. H. Wood & Co., Toronto, Ont., Canada
Woodlets, Inc., Portland, Pa.
Chas. W. Young & Co., Phila.

SOAP PRESSES (see Presses)

SOAP SHEETS (see Soap Paper)

SOAP SOLUTIONIZING DEVICE (Solutionizing and dispensing drums for soft soaps)

Clifton Chemical Co., 62 William St., N. Y.
Davies-Young Soap Co., Dayton, O.
Independent Specialties, 152 W. 75th St., Chicago
U. S. Sanitary Specialties Corp., 1001 S. California Blvd., Chicago 12

SOAP SLABBERS (see Soap Machinery)

SOAP STOCK (Boiled down cotton oil soap stock, etc.)

(see also Brokers and Dealers)

Archer-Daniels-Midland Co., Minneapolis 2
Armour & Co., 1355 W. 31st St., Chicago
Brode Corp., Memphis, Tenn.
T. G. Cooper & Co., Cedar and Venango Sts., Phila.
E. F. Drew & Co., 15 E. 26th St., N. Y. 10
Durkee Famous Foods, Inc., 2670 Elston Ave., Chicago
Falk & Co., Pittsburgh 30
Wm. H. Floyd & Co., Los Angeles
H. Hentz & Co., 60 Beaver St., N. Y.
Portsmouth Cotton Oil Refining Co., Portsmouth, Va.
Procter & Gamble Co., Cincinnati, O.
Southern Cotton Oil Co., 21 West St., N. Y.
A. E. Staley Mfg. Co., Decatur, Ill.
Swift & Co., Chicago 9
Tennessee Soap Co., 1702 N. Thomas Ave., Memphis 1, Tenn.
Welch, Holme & Clark Co., 439 West St., N. Y.

SOAP VALVES (see Soap Dispensing Systems)

SOAP, WHALE OIL (see Whale Oil Soap)

SOAP WRAPPING MACHY. (see Wrapping Mach.)

SOAPLESS DETERGENTS (see Detergents, Synthetic)

SOAPLESS SHAMPOOS (see Shampoos, Soapless)

SOAPS, ANTISEPTIC AND DEODORANT (Cake and liquid)

Armour & Co., Chicago
Chem. Service Co. of Balto., Howard and West Sts., Balto.
Davies-Young Soap Co., Dayton, O.
Eagle Soap Corp., Huntington, Ind.
Fuld Bros., 702 S. Wolfe St., Baltimore
Hysan Prods. Co., 932 W. 38th Place, Chicago
Piatt & Smillie Chemicals, 2329 Pine St., St. Louis 3
Allen B. Wrisley Co., 6801 W. 56th St., Chicago

SOAPS, AUTO (see Potash Soaps)

SOAPS, FLOATING (see Floating Soaps)

SOAPS, GRANULATED (see Laundry Soaps, Granulated)

SOAPS, LIQUID (see Potash Soaps)

SOAPS, MEDICINAL, CAKE (see Medicinal Soaps, Cake)

SOAPS, MOTTLED (see Mottled Soaps)

SOAPS, PINE SCRUB (see Pine Scrub Soaps)

SOAPS, SCOURING (see Scouring Soaps)

SOAPS, SCRUBBING (see Floor Scrub Soaps)

SOAPS, SURGICAL (see Potash Soaps)

SOAPS, TEXTILE (see Textile Soaps)

SODA ASH

(see also Dealers)

American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
John H. Calo Co., 19 Rector St., N. Y. 6
John A. Chew, Inc., 60 E. 42nd St., N. Y. 17
Diamond Alkali Co., 300 Union Commerce Bldg., Cleveland 14
Dow Chemical Co., Midland, Mich.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Mathieson Chemical Corp., 10 Light St., Balto. 18
Niagara Alkali Co., 60 E. 42nd St., N. Y.
Penn Salt Mfg. Co., Widener Bldg., Phila.
Pittsburgh Plate Glass Co., Columbia Chemical Div., 5th & Bellefield, Pittsburgh 13
Solvay Sales Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Jos. Turner & Co., Ridgefield, N. J.
Virginia-Carolina Chem. Corp., Richmond, Va.
Welch, Holme & Clark Co., 439 West St., N. Y.
Westvaco Chem. Div., Food Machy. & Chem. Corp., 405 Lexington Ave., N. Y.
Wyandotte Chemicals Co., Michigan Alkali Div., Wyandotte, Mich.

SODA (Modified)

(see also Dealers)

American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
John A. Chew, 60 E. 42nd St., N. Y. 17
Diamond Alkali Co., 300 Union Commerce Bldg., Cleveland 14
E. I. du Pont de Nemours & Co., Wilmington, Del.
Mathieson Chemical Corp., 10 Light St., Balto. 18
Pittsburgh Plate Glass Co., Columbia Chem. Div., 5th & Bellefield, Pittsburgh 13
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Solvay Sales Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Stauffer Chem. Co., 420 Lexington Ave., N. Y.
Jos. Turner & Co., Ridgefield, N. J.
Virginia-Carolina Chem. Corp., Richmond, Va.
Welch, Holme & Clark Co., 439 West St., N. Y.
Wyandotte Chemicals Corp., J. B. Ford Div., Wyandotte, Mich.

SODIUM ACID SULFATE (see Nitre Cake)

SODIUM ALGINATE

Algin Corp. of America, 24 State St., N. Y.
E. F. Drew & Co., 15 E. 26th St., N. Y. 10
Innis, Speiden & Co., 117 Liberty St., N. Y. 6
Kelco Co., 31 Nassau St., N. Y.

SODIUM ARSENITE

Chipman Chem. Co., Bound Brook, N. J.
Geigy Co., 89 Barclay St., New York
Harshaw Chemical Co., 1945 E. 97th St., Cleveland 6
Merck & Co., Rahway, N. J.
Penn Salt Mfg. Co., Widener Bldg., Phila.
Rosenthal Bercow Co., 25 E. 26th St., N. Y. 10
Shepherd Chem. Co., Cincinnati 12, O.
Stauffer Chem. Co., 420 Lexington Ave., N. Y.

SODIUM BENZOATE

J. T. Baker Chem. Co., Phillipsburg, N. J.
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E. I. du Pont de Nemours & Co., Wilmington, N. J.
Heyden Chem. Corp., 393 7th Ave., N. Y.
Hooker Electrochem. Co., Niagara Falls, N. Y.
Innis, Speiden & Co., 117 Liberty St., N. Y. 6
Merck & Co., Rahway, N. J.
Monsanto Chemical Co., 1700 S. 2nd St., St. Louis
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Seydel Chem. Co., 225 Mercer St., Jersey City, N. J.

SODIUM BICARBONATE

(see also Dealers)

American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
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Diamond Alkali Co., 300 Union Commerce Bldg., Cleveland 14
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Harshaw Chemical Co., 1945 E. 97th St., Cleveland 6
Innis, Speiden & Co., 117 Liberty St., N. Y.
Mathieson Chemical Corp., 10 Light St., Balto. 18
Monsanto Chem. Co., 1800 S. 2nd St., St. Louis
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Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Solvay Sales Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Jos. Turner & Co., Ridgefield, N. J.
Virginia-Carolina Chem. Corp., Richmond 8, Va.
Welch, Holme & Clark Co., 439 West St., N. Y.
Wyandotte Chemicals Corp., Michigan Alkali Div., Wyandotte, Mich.

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E. I. du Pont de Nemours & Co., Wilmington, Del.
General Chem. Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Harshaw Chemical Co., 1945 E. 97th St., Cleveland 6
Innis, Speiden & Co., 117 Liberty St., N. Y. 6
Mallinckrodt Chem. Co., 2nd & Mallinckrodt Sts., St. Louis 7
Merck & Co., Rahway, N. J.
Mutual Chemical Co., 270 Madison Ave., N. Y.
Natural Products Refining Co., 900 Garfield Ave., Jersey City, N. J.
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Jos. Turner & Co., Ridgefield, N. J.

SODIUM BISULFATE (see Nitre Cake)

SODIUM CARBONATE (see Soda Ash)

SODIUM CELLULOSE SULFATE

Tennessee Eastman Co., Kingsport, Tenn.

SODIUM CHLORATE

J. T. Baker Chem. Co., Phillipsburg, N. J.
Chipman Chem. Co., Bound Brook, N. J.
E. I. du Pont de Nemours & Co., Wilmington
Harshaw Chemical Co., 1945 E. 97th St., Cleveland 6
Mallinckrodt Chem. Co., 2nd & Mallinckrodt Sts., St. Louis 7
Merck & Co., Rahway, N. J.
Oldbury Electrochem. Co., 22 E. 40th St., N. Y.
Penn Salt Mfg. Co., Widener Bldg., Phila.
Rosenthal Bercow Co., 25 E. 26th St., N. Y. 10
Western Electrochem. Co., Los Angeles 23, Calif.

SODIUM CHLORIDE (see Salt, Common Salt)

SODIUM CHLORITE

Mathieson Chemical Corp., 10 Light St., Balto. 18

SODIUM CYANIDE

American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
John A. Chew, Inc., 60 E. 42nd St., N. Y. 17
E. I. du Pont de Nemours & Co., Wilmington, Del.
General Chem. Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Mallinckrodt Chemical Wks., 2nd & Mallinckrodt Sts., St. Louis 7
Merck & Co., Rahway, N. J.
Koppers Co., Pittsburgh 19
Rosenthal Bercow, 25 E. 26th St., N. Y.
Jos. Turner & Co., Ridgefield, N. J.

SODIUM FLUORIDE (see Fluorides)

SODIUM FLUOSILICATE (see Sodium Silicofluoride)

SODIUM HYDROSULFITE

American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
J. T. Baker Chem. Co., Phillipsburg, N. J.
John A. Chew, Inc., 60 E. 42nd St., N. Y. 17
E. I. du Pont de Nemours & Co., Wilmington, Del.
General Chem. Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
General Dyestuff Corp., 435 Hudson St., N. Y.
Harshaw Chemical Co., 1945 E. 97th St., Cleveland 6
Innis, Speiden & Co., 117 Liberty St., N. Y.
Mallinckrodt Chem. Wks., 2nd & Mallinckrodt Sts., St. Louis 7
Merck & Co., Rahway, N. J.
Rohm & Haas Co., Inc., 222 W. Washington Sq., Phila.
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Royce Chemical Co., Carlton Hill, N. J.
Welch, Holme & Clark Co., 439 West St., N. Y. 14
Jacques Wolfe, Passaic, N. J.

SODIUM HYPOCHLORITE (see Laundry Bleach)

SODIUM HYPOSULFITE (Thiosulfate)

E. I. du Pont de Nemours & Co., Wilmington, Del.
General Chem. Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Harshaw Chemical Co., 1945 E. 97th St., Cleveland 6
Innis, Speiden & Co., 117 Liberty St., N. Y.
A. R. Maas Chem. Co., South Gate, Calif.
Mallinckrodt Chem. Wks., St. Louis
Merck & Co., Rahway, N. J.
Rohm & Haas, 222 W. Washington Sq., Phila.
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Virginia Smelting Co., W. Norfolk, Va.
Welch, Holme & Clark Co., 439 West St., N. Y. 14

SODIUM LAURYL SULFATE (see Sulfated Fatty Alcohols)

SODIUM METAPHOSPHATE

Blockson Chem. Co., Joliet, Ill.
John A. Chew, Inc., 60 E. 42nd St., N. Y. 17
General Chem. Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Griffin Chemical Co., 1000 16th St., San Francisco
Mechling Bros. Chemical Co., Camden, N. J.
Monsanto Chemical Co., 1700 S. 2nd St., St. Louis
Rumford Chemical Works, Rumford 16, R. I.
Victor Chem. Wks., 141 W. Jackson, Chicago
Welch, Holme & Clark Co., 439 West St., N. Y.

SODIUM METASILICATE

Cowles Chemical Co., 7016 Euclid Ave., Cleveland
Diamond Alkali Co., 300 Union Commerce Blvd., Cleveland 14
E. I. du Pont de Nemours & Co., Wilmington, Del.
Emeryville Chem. Co., 405 Montgomery St., San Francisco
General Chemical Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y. 6
Innis, Speiden & Co., 117 Liberty St., N. Y. 6
Philadelphia Quartz Co., Public Ledger Bldg., Phila. 6
Virginia-Carolina Chem. Corp., Richmond 5, Va.
Welch, Holme & Clark Co., 439 West St., New York

SODIUM ORTHOSILICATE

Cowles Chemical Co., 7016 Euclid Ave., Cleveland
Diamond Alkali Co., 300 Union Commerce Bldg., Cleveland 14
Innis, Speiden & Co., 117 Liberty St., N. Y.
Pennsylvania Salt Mfg. Co., 1000 Widener Bldg., Phila.

SODIUM PERBORATE

(see also Dealers)

American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
Croton Chem. Corp., 114 Liberty St., N. Y.
Dow Chemical Co., Midland, Mich.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Harshaw Chemical Co., 1945 E. 97th St., Cleveland 6
Innis, Speiden & Co., 117 Liberty St., N. Y.
Mallinckrodt Chem. Wks., 2nd & Mallinckrodt Sts., St. Louis 7
Merck & Co., Rahway, N. J.
Welch, Holme & Clark Co., 439 West St., N. Y. 14

SODIUM PYROPHOSPHATE (see Tetrasodium Pyrophosphate)

SODIUM SESQUICARBONATE

John A. Chew, 60 E. 42nd St., N. Y. 17
Diamond Alkali Co., 300 Union Commerce Bldg., Cleveland 14
Mathieson Chemical Corp., 10 Light St., Balto. 18
Rosenthal Bercow Co., 25 E. 26th St., N. Y. 10
Solvay Sales Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Virginia-Carolina Chemical Corp., Richmond, Va.
Welch, Holme & Clark Co., 439 West St., N. Y.
Westvaco Chem. Div., Food Machy. & Chem. Corp., 415 Lexington Ave., N. Y. 17

SODIUM SESQUISILICATE

Cowles Chemical Co., 7016 Euclid Ave., Cleveland
Diamond Alkali Co., 300 Union Commerce Bldg., Cleveland 14
Innis, Speiden & Co., 117 Liberty St., N. Y.
Philadelphia Quartz Co., Public Ledger Bldg., Phila. 6
Rosenthal Bercow Co., 25 E. 26th St., N. Y. 10
Solvay Sales Division, Allied Chemical & Dye Corp., 40 Rector St., N. Y. 6
Jos. Turner & Co., Ridgefield, N. J.
Virginia-Carolina Chem. Corp., Richmond 8, Va.
Welch, Holme & Clark Co., 439 West St., N. Y.
Wyandotte Chemicals Corp., Michigan Alkali Div., Wyandotte, Mich.

SODIUM SILICATE

(see also Dealers)

American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
John A. Chew, 60 E. 42nd St., N. Y. 17
Diamond Alkali Co., 300 Union Commerce Bldg., Cleveland 14
E. I. du Pont de Nemours & Co., Wilmington, Del.
Emeryville Chem. Co., 405 Montgomery St., San Francisco
General Chem. Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Philadelphia Quartz Co., Public Ledger Bldg., Phila. 6
Rosenthal Bercow Co., 25 E. 26th St., N. Y. 10
Virginia-Carolina Chem. Corp., Richmond 5, Va.
Welch, Holme & Clark Co., 439 West St., N. Y.

SODIUM SILICOFLUORIDE

American British Chem. Supplies, Inc., 180 Madison Ave., N. Y.
American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
American Fluoride Corp., 151 W. 19th St., N. Y.
Armour Fertilizer Wks., Atlanta, Ga.
Blockson Chemical Co., Joliet, Ill.
Croton Chem. Corp., 114 Liberty St., N. Y.
E. I. du Pont de Nemours & Co., Wilmington, Del.
General Chem. Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Harshaw Chemical Co., 1945 E. 97th St., Cleveland
Innis, Speiden & Co., 117 Liberty St., N. Y.
W. B. Lawson, Inc., Union Commerce Bldg., Cleveland
Merck & Co., Rahway, N. J.
Penn. Salt Mfg. Co,. Widener Bldg., Phila.
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Henry Sundheimer, Inc., 103 Park Ave., N. Y.
Tennessee Corp., Atlanta, Ga.
Jos. Turner & Co., Ridgefield, N. J.
Welch, Holme & Clark Co., 439 West St., N. Y. 19

SODIUM TRIPOLYPHOSPHATE

Blockson Chemical Co., Joliet, Ill.
John A. Chew, Inc., 60 E. 42nd St., N. Y. 17
A. R. Maas Chemical Co., 4570 Ardine St., South Gate, Calif.
Monsanto Chem. Co., St. Louis 4
Virginia-Carolina Chem. Corp., Richmond 8, Va.
Victor Chemical Wks., 141 W. Jackson, Chicago
Westvaco Chem. Div., Food Machy. & Chem. Corp., 415 Lexington Ave., N. Y. 17

SOFT SOAPS (See Potash Soaps)

SOLUBLE OILS (See Sulfonated Oils)

SOLVENT NAPHTHA

Anderson-Prichard Oil Corp., Oklahoma City, Okla.
Atlantic Refining Co., 260 S. Broad St., Phila.
Barrett Div., Allied Chem. & Dye Corp., 40 Rector St. N. Y.
S. H. Bell Co., 1407 Gulf Bldg., Pittsburgh
John H. Calo Co., 19 Rector St., N. Y. 6
Central Solvents & Chemicals Co., 2545 W. Congress St., Chicago 12
Commerce Petroleum Co., 2923 Lock St., Chicago
Gulf Oil Corp., Pittsburgh 30
Koppers Co., Koppers Bldg., Pittsburgh
Neville Co., Pittsburgh
Pennsylvania Refining Co., Butler, Pa.
Reilly Tar & Chemical Corp., Indianapolis
Shell Chemical Corp., 500 5th Ave., N. Y. 18
Skelly Oil Co., 605 W. 47th St., Kansas City, Mo.

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- **Smooth, easy action!**
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- **High-pressure, controlled atomization!**
- **Attractive, eye-catching finish!**

Dobbins builds into every unit the exact features required for efficient and economical spraying or dusting. Dobbins galvanized and tin chemical sprayers, atomizers and dusters are sturdily built, efficiently designed, attractively finished. There's a size and type for every purpose.

CONTINUOUS SPRAYER

The new 31G is a continuous-type sprayer with galvanized tank and pump equipped with a patented atomizing whirl-spray nozzle. Two-quart tank is fitted with new, no-leak cap. Pump features a positive-action air check valve.

HIGH-PRESSURE CHEMICAL SPRAYER

Any degree of atomization, from a fine mist to a coarse spray, is furnished by Dobbins No. 35G chemical sprayer. There's finger-tip lever action shut-off, and needle valve volume control. The pressure-seal valve-plunger is self-lubricating. Positive-action air-check valve is easily removable for cleaning. Ruggedly constructed for specialized high-pressure chemical applications.

LEVER-ACTION CHEMICAL SPRAYER

The Dobbins No. 43G is a three-quart continuous sprayer with lever-controlled shut-off valve. Galvanized tank and pump featuring a whirling brass spray cap, with strainer. Handles oil sprays, chemicals and other sediment-free solutions smoothly and forcefully.

FLOOR OIL SPRAYER

Dobbins No. 11 is ideal for the application of floor oils and other floor dressings. Patented air regulator gives easy control of atomization. Nozzle position makes it possible to spray a fine, even film over large areas and under desks and furniture. Positive-action air valve in pump is easily removed for cleaning.

HAND DUSTER

Delivers a fine uniform dust without waste. Develops a blast of air at start of stroke. No. 133 is furnished with a 24″ discharge tube with angled end for accurate placement of dust. Positive action air valve prevents dust from entering pump cylinder.

SOAP SPRAYER

An economical, easy-to-operate 3½-gallon galvanized soap sprayer for janitor service. Hose, valve seats and all gaskets of No. S 122G soap sprayer are resistant to caustic soap. The flat-fan nozzle discharge insures thorough even coverage.

COMPRESSED AIR SPRAYER

Large opening in top for easy cleaning and filling. Long-stroke pump with self-lubricating pressure-seal valve plunger. Develops high pressure with little effort. Handles all solutions efficiently. Four-gallon tank, available in seam-welded galvanized or stainless steel models. Oil and chemical-resistant hose and gaskets are used in No. 44G.

NEW DOBBINS ADJUSTABLE NOZZLE

This nozzle is adjustable to any spray from a fine fog to a forceful solid stream. Adjusts like common garden hose nozzle. Increases tremendously the versatility of any sprayer, and fits any standard ¼″ pipe threading.

The complete Dobbins line of spraying and dusting equipment includes hand and power models of all types and capacities. Write today for descriptive literature and information about the engineering service we offer to help solve your spraying and dusting problems.

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ELKHART, INDIANA

SOLVENT, NAPHTHA (Contd.)

Sinclair Refining Co., East Chicago, Ind.
Standard Oil Co. (Calif.), 225 Bush St., San Francisco
Standard Oil Co. (Ind.), 910 S. Michigan Ave., Chicago
Tar Residuals, Inc., 420 Lexington Ave., N. Y.

SOLVENTS (Chlorinated, also alcohols, coal tar derivatives, etc.)

Barrett Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Carbide & Carbon Chem., 30 E. 42nd St., N. Y.
John A. Chew, Inc., 60 E. 42nd St., N. Y. 17
Commercial Solvents Corp., 17 E. 42nd St., N. Y.
Crosby Chemicals, Inc., De Ridder, La.
Dow Chemical Co., Midland, Mich.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Enjay Co. 15 W. 51st St., N. Y.
Hercules Powder Co., Wilmington (Terpene)
Hooker Electrochemical Co., Niagara Falls, N. Y.
Kessler Chem. Corp., Philadelphia
Koppers Co., Koppers Bldg., Pittsburgh
Michigan Chemical Corp., St. Louis, Mich.
Monsanto Chemical Co., 1700 2nd St., St. Louis
Neville Co., Pittsburgh
Newport Industries, 230 Park Ave., N. Y.
Pennsylvania Refining Co., Butler, Pa.
Reilly Tar & Chemical Corp., 123 S. Broad St., Indianapolis
Sharples Solvents Corp., 100 Bush St., Phila.
Shell Chemical Corp., 500 5th Ave., N. Y. 18
Skelly Oil Co., Kansas City
Solvay Sales Div., 40 Rector St., N. Y. 6
U. S. Industrial Chemicals, Inc., 60 E. 42nd St., N. Y.
Velsicol Corp., 330 E. Grand Ave., Chicago
Westvaco Chem. Div., Food Machy. & Chem. Corp., 405 Lexington Ave., N. Y.
Wyandotte Chemicals Corp., Michigan Alkali Div., Wyandotte, Mich.

SOLVENTS, OXYGENATED

Carbide & Carbon Chem., 30 E. 42nd St., N. Y.
Dow Chemical Co., Midland, Mich.
E. I. du Pont de Nemours & Co., Wilmington
Enjay Co., 15 W. 51st St., N. Y. 19
U. S. Industrial Chemicals, Inc., 60 E. 42nd St., N. Y.

SOLVENTS, PETROLEUM

American Mineral Spirits Co., 230 N. Michigan Ave., Chicago
Anderson-Prichard Oil Co., Oklahoma City, Okla.
Atlantic Refining Co., 260 S. Broad St., Philadelphia
John H. Calo Co., 19 Rector St., N. Y. 6
Carbide & Carbon Chem., 30 E. 42nd St., N. Y.
Central Solvents & Chemicals Co., 2545 W. Congress St., Chicago 12
Commerce Petroleum Co., 2923 Lock St., Chicago
Deep Rock Hill Corp., 155 N. Clark St., Chicago
E. I. du Pont de Nemours & Co., Wilmington, Del.
Gulf Oil Corp., Pittsburgh 30
Neville Co., Pittsburgh 25
Oil States Pet. Co., 233 Broadway, N. Y.
Pennsylvania Refining Co., Butler, Pa.
Phillips Petroleum Co., Chemical Prods. Dep., Bartlesville, Okla.
Shell Oil Co., 50 W. 50th St., N. Y.
Shell Chemical Corp., 500 5th Ave., N. Y. 18
Sinclair Refining Co., 630 5th Ave., N. Y.
Skelly Oil Corp., 605 W. 47th St., Kansas City, Mo.
L. Sonneborn Sons, 300—4th Ave., N. Y. 10
Standard Oil Co. (Calif.), 225 Bush St., San Francisco
Standard Oil Co. (Ind.), 910 S. Michigan Ave., Chicago
Standard Oil Co. (Ohio), Midland Bldg., Cleveland
Velsicol Corp., 330 Grand Ave., Chicago

SOYA BEAN OIL

(see also Brokers and Dealers)

Archer-Daniels-Midland Co., Minneapolis 2
Balfour, Guthrie Co., 67 Wall St., N. Y.
Irving R. Boody & Co., 120 Wall St., N. Y.
John H. Calo Co., 19 Rector St., N. Y. 6
E. F. Drew & Co., Wecoline Div., Boonton, N. J.
Eastern Industries, Inc., Ridgefield, N. J.
Falk & Co., Pittsburgh 30
General Mills, Chemical Div., 400 2nd Ave., Minneapolis 1
William O. Goodrich Co., Milwaukee, Wis.
W. R. Grace & Co., 7 Hanover Sq., N. Y.
Hasselman, Seaman, de Ryss, Inc., 347 Madison Ave., N. Y. 17
Spencer Kellogg & Son, Buffalo, N. Y.
Leghorn Trading Co., 21 West St., N. Y.
Pacific Vegetable Oil Co., 62 Townsend St., San Francisco
Procter & Gamble Co., Cincinnati
Purina Mills, St. Louis
Robinson Wagner Co., 110 E. 42nd St., N. Y.
Werner G. Smith Co., 2191 W. 110th St., Cleveland
A. E. Staley Mfg. Co., Decatur, Ill.
Welch, Holme & Clark Co., 439 West St., N. Y.
G. A. Wharry & Co., 95 Broad St., N. Y. 4

SOYA BEAN FATTY ACIDS

Archer Daniels-Midland Co., Roanoke Bldg., Minneapolis, Minn.
Armour & Co., Union Stock Yards, Chicago
E. F. Drew & Co., 15 E. 26th St., N. Y. 10
Emery Industries, 4300 Carew Tower, Cincinnati 2
General Mills, Chemical Div., Minneapolis 1
A. Gross & Co., 295 Madison Ave., N. Y. 17
W. C. Hardesty Co., 41 E. 42nd St., N. Y. 17
Swift & Co., Chicago 9
Welch, Holme & Clarke Co., 429 W. 29th St., N. Y. 14
Woburn Chemical Corp., Harrison, N. J.

SPONGES (Natural and Synthetic)

Addison Sponge Co., 118 E. Court St., Cincinnati
Allied Industrial Prods. Co., 620 N. Michigan, Chicago
American Sponge & Chamois Co., 47 Ann St., N. Y.
American Standard Mfg. Co., 2509 S. Green St., Chicago
Atlas Sponge Co., 291 Church St., N. Y.
E. I. du Pont de Nemours & Co., Wilmington (Cellulose)
Florida Sponge & Chamois Co., 42 Cliff St. ,N. Y.
Great Eastern Sponge & Chamois Co., 233 N. Catt. Pk. Ave., Baltimore
James H. Rhodes & Co., 157 W. Hubbard St., Chicago
Robinson Sponge Co., 1805 Atlantic Ave., Brooklyn

SPOTTING FLUIDS (see Cleaning Fluids)

SPOUTS (see Can Spouts, Closures)

SPRAYERS, BOTTLE

Arnold-Copeland Co., 22 Elkins St., So. Boston, Mass.
Calmar Co., 6800 McKinley Ave., Los Angeles, Calif.
Federal Tool Corp., 3600 S. Pratt Blvd., Chicago 45
H. D. Hudson Mfg. Co., 549 E. Illinois St., Chicago 11
Wilco Co., 4425 Bandinni Blvd., Los Angeles 23

SPRAYERS. COMPRESSED AIR

Acmeline Mfg. Co., Traverse City, Mich.
Binks Mfg. Co., 3114 Carroll Ave., Chicago
E. C. Brown Co., Rochester, N. Y.
Champion Sprayer Co., 6523 Heintz Ave., Detroit 11
R. E. Chapin Mfg. Co., Batavia, N. Y.
DeVilbiss Co., Toledo, O.
Dobbins Mfg. Co., Elkhart, Ind.
Electric Sprayit Co., 1415 Illinois Ave., Sheboygan, Wis.
Fumeral Co., Racine, Wis. (built in systems)
Hudson Mfg. Co., 589 E. Illinois St., Chicago
Imperial Brass Co., 1200 W. Harrison St., Chicago
Lofstrand Co., Rockville, Md.
Lowell Mfg. Co., 589 E. Illinois St., Chicago
Piezo Mfg. Corp., 110 E. 42nd St., N. Y.
Simmon Paint Spray Brush Co., Dayton, O.
Universal Metal Prods. Co., Lowell, Mich.
Volume Sprayer Mfg. Co., Tulsa, Okla.

ONE GOOD PRODUCT DESERVES ANOTHER

The best insecticide in the world is fully effective *only* if it is used with an efficient sprayer

Modern, scientifically designed Hudson sprayers are *low* in cost, *easy* to use, *highly* efficient, and built to take heavy industrial use. Use modern Hudson sprayers in demonstrating and selling your insecticide. Applications are so effective, sales of your product are bound to improve.

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Designed for heavy service in industrial, commerical, professional, or any other field where extra discharge capacity and rugged design are important. Highly useful in applying insecticides at the correct pressures and in spray patterns that give the best results.

Pressure release valve operates automatically. Tank can not be opened until pressure is exhausted, 2¾ or 4 gallons, stainless or galvanized steel. Seamless brass pump delivers steady stream, develops 80 pound pressure.

Four spray discs are provided for any type spray: flat fan, solid or hollow cone, fine and coarse mist, and stream.

Hudson Lektrik-Spray* Wizard*

Provides fast, easy sure way of discharging insecticides, disinfectants and deodorants. Dual-purpose nozzle discharges either wet, residual spray for surface spraying or fine mist for space spraying. Time switch shuts off motor automatically. Delivers 1 oz. per minute. 24 oz. removable glass tank.

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Extra capacity 3 quart galvanized steel tank protects sprays from light. Same dual-purpose nozzle and time switch as model above. Delivers liquid insecticides, disinfectants and deodorants at a rate of 1 oz. per minute. Dusting and paint-spraying attachments are available for both Lektrik-Spray* models.

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GREATEST ADVANCE IN SPRAYERS IN YEARS!

Fewer Strokes Put Out More Spray With Finer Particles for

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These claims of greater knockdown and kill of insects are based on scientifically controlled biological tests. These show that a given volume of insecticide dispensed by Hudson Nebulizers results in at least 20% greater knockdown of flies in a given length of time and at least 25% greater kill of flies as compared to other type hand sprayers.

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Fewer strokes to put out a greater volume of spray. That means less work.

Smaller particle size to bombard insects with more particles of insecticide and greatly increase knockdown and kill. That means a more effective job.

No dripping, no spitting and no mess with Hudson Nebulizers. That means a clean job.

The line of Hudson Nebulizers is complete—from 8 ounce to 2 quart sizes. Each Nebulizer is made of the highest quality materials and precision workmanship throughout. Each is inspected and tested to spray at the factory.

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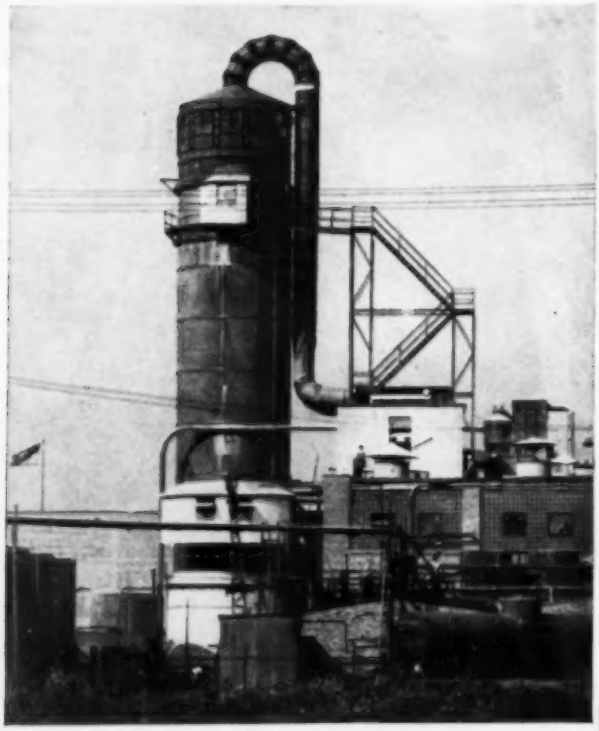

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Bleaching	Fat Splitting
Deodorizing	Glycerine
Margarine	Hydrogenating

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SPRAYERS, ELECTRIC

Acmeline Mfg. Co., Traverse City, Mich.
Binks Mfg. Co.. 3114 Carroll Ave., Chicago
Breuer Elect. Mfg. Co., 5100 N. Ravenswood Ave., Chicago 40
DuLa Mfg. Co., 351 Atlantic Ave., Brooklyn, N. Y.
Electric Sprayit Co., 1415 Illinois Ave., Sheboygan, Wis.
Fumeral Co., Racine, Wis.
Hudson Mfg. Co., 589 E. Illinois St., Chicago
Lowell Mfg. Co., 589 E. Illinois St., Chicago
Piezo Mfg. Corp., 110 E. 42nd St., N. Y.
Z & W Machine Prods., 5151 St. Clair Ave., Cleveland 14

SPRAYERS, ELECTRIC, STEAM

DuLa Mfg. Co., 351 Atlantic Ave., Brooklyn
Electric Sprayit Co., Sheboygan, Wisc.
Fumeral Co., Racine, Wis.
Hydro-Mist Corp., 531 State St., Glendale, Calif.
Lowell Mfg. Co., North Pier Terminal, Chicago
Madewell Products Inc., 3125 E. 7th St., Oakland, Calif.

SPRAYERS, HAND

Acmeline Mfg. Co., Traverse City, Mich.
R. E. Chapin Mfg. Co., Batavia, N. Y.
Dobbins Mfg. Co., Elkhart, Ind.
Electric Sprayit Co., 1415 Illinois Ave., Sheboygan, Wis.
Hudson Mfg. Co., 589 E. Illinois St., Chicago
Jaeckh Mfg. Co., Cincinnati
Lowell Mfg. Co., 589 E. Illinois St., Chicago
D. B. Smith Co., Utica, N. Y.
Standard Container, Inc., Rockaway, N. J.
Universal Metal Prods. Co., Lowell, Mich.
Volume Sprayer Mfg. Co., Tulsa, Okla.
Wilco Co., 4425 Bandinni Blvd., Los Angeles 23
Z & W Machine Prods., 5151 St. Clair Ave., Cleveland 14

SPRAYERS, POWER (Heavy Duty)

John Bean Mfg. Co., Div. Food Mach. Co., Lansing, Mich.
Besler Corp., 4053 Harlan St., Emeryville, Calif.
Buffalo Turbine Agri. Equip. Co., Towanda, N. Y.
Dobbins Mfg. Co., Elkhart, Ind.
A. B. Farquhar Co., 142 N. Duke St., York, Pa.
Fumeral Co., Racine, Wis.
Hanson Chemical & Equipment Co., Beloit, Wis.
H. D. Hudson Mfg. Co., 589 E. Illinois St., Chicago
Hardie Mfg. Co., Hudson, Mich.
Hurst Industries, Inc., 1849 S. 1st St., San Jose, Cal.
F. E. Myers & Brothers Co., Ashland, O.
Oberdorfer Foundries, Inc., 5100 Thompson Rd., Syracuse
Silver Creek Precision Co., Silver Creek, N. Y.
Todd Shipyards Corp., 601 W. 26th Street, N. Y.
Victor Products Corp., Ransom, W. Va.

SPRAYERS, NOZZLES for

Accessories Mfg. Co., 705 McGee St., Kansas City, Mo.
Bete Fog Nozzle Co., Greenfield, Mass.
H. D. Hudson Mfg. Co., 549 E. Illinois St., Chicago 11
Monarch Mfg. Works, 3406 Miller St., Phila.
Spraying Systems Co., 3217 Randolph St., Bellwood, Ill.

SPRAY PROCESS SOAP PLANT INSTALLATIONS

Alan Porter Lee, 81 Miller Road, Morristown, N. J.
Bowen Engineering, Inc., Garwood, N. J.
J. W. McCutcheon, 475 Fifth Ave., N. Y.
Swenson Evaporator Div., Whiting Corp., Whiting, Ill.
Wurster & Sanger, 5201 S. Kenwood Ave., Chicago

SPRAY SYSTEMS, PERMANENT INSTALLATIONS

Fumeral Co., Racine, Wisc.
H. D. Hudson Mfg. Co., 549 E. Illinois St., Chicago 11
Virginia Smelting Co., West Norfolk, Va.
Z & W Machine Prods., 5151 St. Clair Ave., Cleveland 14

SPREADERS for INSECTICIDE (see Agricultural Insecticide Spreaders, Clays, Emulsifiers, etc.)

SQUEEGEES

Ardmore Mfg. Co., 5082 N. Lincoln Ave., Chicago
W. J. Dennis & Co., 1732 N. Kolmar, Chicago
A. F. Dormever Mfg. Co., 4316 N. Kilpatk. St., Chicago
Greenview Mfg. Co., 2557 Greenview Ave., Chicago 14
Aug. Hanke & Son Co., 6326 W. Guyer Ave., Chicago
Warren Haviland Corp., 1810 Chouteau Ave., St. Louis 3
Illinois Duster & Brush Co., 1944 Webster Ave., Chicago
J. Racenstein & Co., 621 Broadway, N. Y.
Reliance Hardware & Mfg. Co., 1438 N. Keating St., Chicago
White Mop Wringer Co., Fultonville, N. Y.

SQUILLS (Rodent Poison)

A-M-R Chemical Co., 985 E. 35th St., Bklyn. 18
Heckathorn & Co., Richmond, Calif.
J. L. Hopkins & Co., 220 Broadway, N. Y.
McLaughlin, Gormley, King Co., 1715 5th St., S. E., Minneapolis, Minn.
S. B. Penick & Co., 50 Church St., N. Y.
Prentiss Drug & Chem. Co., 110 William St., N. Y.
York Chem. Co., 23 Dean St., Brooklyn, N. Y.

STANNOUS CHLORIDE (see Tin Crystals)

STARCH

(see also Dealers)

American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
Arabol Mfg. Co., 110 E. 42nd St., N. Y.
T. G. Cooper & Co., 117 Liberty St., N. Y.
Arnold Hoffman & Co., 55 Canal St., Providence, R. I.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Keever Starch Co., Columbus, O.
H. Kohnstamm & Co., 91 Park Pl., N. Y.
National Starch Prods., 270 Madison Ave., N. Y.
Orbis Products Corp., 215 Pearl St., N. Y.
Rosenthal Bercow Co., 25 E. 26th St., N. Y. 10
L. A. Salomon & Bro., 216 Pearl St.
A. E. Staley Mfg. Co., Decatur, Ill.
Welch, Holme & Clark Co., 439 West St., N. Y.

STEARATES (Zinc, Calcium, Magnesium, etc.)

(see also Dealers)

American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
Antara Prods., Div. General Dyestuff Corp., 435 Hudson St., N. Y.
Arnold Hoffman & Co., 55 Canal St., Providence, R. I.
Atlas Powder Co., Wilmington, Del.
Cuprinol Inc., 7 Water St., Boston
E. I. du Pont de Nemours & Co., Wilmington, Del.
Glyco Prods. Co., 26 Court St., Brooklyn 2
R. W. Greeff & Co., 10 Rockefeller Plaza, N. Y.
W. C. Hardesty Co., 41 E. 42nd St., N. Y. (Glyceryl, Glycol)
Harshaw Chemical Co., 1945 E. 97th St., Cleveland
Innis, Speiden & Co., 117 Liberty St., N. Y.
Kessler Chem. Co., State Rd., Phila. 35 (Glyceryl, Glycol)
Mallinckrodt Chem. Wks., St. Louis
Merck & Co., Rahway, N. J.
Metasap Chem. Co., First & Essex Sts., Harrison, N. J.
M. W. Parsons, Inc., 59 Beekman St., N. Y.
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Jos. Turner & Co., Ridgefield, N. J.
Chas. A. Wagner Co. 813 Callowhill St., Phila
Warwick Wax Co., 10-10 44th Ave., L. I. C. 1, N. Y.
Whittaker, Clark & Daniels, 260 W. Bway., N. Y.
Witco Chemical Co., 295 Madison Ave., N. Y.

STEARIC ACID

(see also Brokers and Dealers)

American British Chem. Supplies, Inc., 180 Madison Ave., N. Y.
American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
Archer-Daniels-Midland Co., Minneapolis 2

ATLANTIC PETROLEUM CHEMICALS

ULTRAWETS

Atlantic ULTRAWETS are alkyl aryl sulfonate type anionic surface-active agents with excellent sudsing and wetting properties, especially in hard water. Though mild and neutral, their pronounced surface activity makes them powerful detergents.

They are light amber to white in color and almost odorless. They are available in liquid, flake and bead form.

As flakes and beads, they are used primarily as constituents in dry-mixed compounds. As liquids, they are used in stock solutions for industrial processing, in compounding liquid products, and in preparing liquids or slurries for drum or spray drying.

Chemically the ULTRAWETS are stable in acid and alkaline media, and their low sensitivity to calcium, magnesium and other heavy metal ions makes them especially desirable in hard water. They are compatible with acid, alkaline and neutral salts, soaps, anionic and nonionic detergents and other materials commonly used in cleaning compounds. However, like all anionic detergents, they react and should not be used with cationic (quaternary ammonium) surface-active agents.

The ULTRAWETS have been used to advantage in many types of products and applications. Among them are: Dishwashing compounds, detergents for fine fabrics, scouring powders, paint cleaners, wallpaper removers, light and heavy duty household detergents, window cleaners, upholstery and rug shampoos, automobile and aircraft body cleaners, liquid soaps, shampoos, shaving creams, beard softeners, bubble bath preparations, bottle washing compounds, dairy cleaners, glass rinses, laundry detergents, metal cleaners, for wetting out, dye leveling, scouring, wool carbonizing assistant, and so on.

Currently available ULTRAWETS are:

	Appearance	% Solids	% Active Minimum	% Sodium Sulfate	Haze Pt. °F
Ultrawet 30DS	Clear, pale yellow liquid	30	25.5	4.5	85
Ultrawet 35KX	Light amber slurry	35	31.5	3.5	90
Ultrawet DS	Light cream-colored flakes	100	85.0	15.0	—
Ultrawet K	Light cream-colored flakes	100	85.0	15.0	—
Ultrawet SK	White, free-flowing beads	100	35.0	65.0	—
Ultrawet 60L	Clear, pale yellow liquid	60	60.0	—	14

PERFORMANCE TESTS

SURFACE TENSION—in dynes/cm @ 25° C

	Concentration Wt. % Product	Distilled Water	300 ppm Hardness	Distilled 2% NaOH	Water 2% H_2SO_4
Ultrawet 30DS	0.15 0.50	29.2 28.1	27.4 27.0	27.2 27.3	27.1 27.0
Ultrawet DS	0.05 0.15	28.9 28.4	27.6 27.5	27.5 27.3	27.7 27.5
Ultrawet 35KX	0.15 0.50	31.3 31.2	27.5 27.3	27.5 —	27.4 —
Ultrawet K	0.05 0.15	29.5 28.6	27.2 27.3	27.0 27.0	27.5 27.3
Ultrawet SK	0.05 0.15	31.7 28.2	27.8 27.4	27.3 27.0	27.7 27.1
Ultrawet 60L	0.05 0.10	30.0 27.7	27.5 27.4	— —	— —

CLARKSON-DRAVES WETTING TEST—in seconds @ 25° C

	Concentration Wt. % Product	Distilled Water	300 ppm Hardness	Distilled 2% NaOH	Water 2% H_2SO_4
Ultrawet 30DS	0.15 0.50	110 7	105 7	63 6	48 4
Ultrawet DS	0.05 0.15	100 8	85 8	50 6	38 4
Ultrawet 35KX	0.15 0.50	22 2.7	25 3	74* —	50* 12*
Ultrawet K	0.05 0.15	26 5	40 5	50 12*	40 5
Ultrawet SK	0.05 0.15	300+ 19	300+ 21	300+ 40*	300+ 30
Ultrawet 60L	0.10 0.20	28 7.3	28 8.2	— —	— —

*Solution hazy, not completely miscible

ROSS-MILES FOAM TEST—in millimeters @ 110° F

	Concentration Wt. % Product	Distilled Initially	Distilled 5 Min.	300 ppm Initially	300 ppm 5 Min.
Ultrawet 30DS	0.15 0.50	200 245	170 215	135 275	110 240
Ultrawet DS	0.05 0.15	200 240	170 215	154 270	130 240
Ultrawet 35KX	0.15 0.50	220 260	185 230	225 265	195 230
Ultrawet K	0.05 0.15	220 245	190 215	200 275	165 235
Ultrawet SK	0.05 0.15	205 235	175 210	50 240	45 205
Ultrawet 60L	0.10 0.25	220 250	190 220	165 245	140 215

• Liquid ULTRAWETS are supplied in 480-lb. (55-gal.) steel drums and in tank cars; dry-flaked products in 200-lb. (50-gal.) fiber drums; and bead form products in 25-lb. 5-ply paper bags.

Samples and further information on the ULTRAWETS will be supplied on request.

THE ATLANTIC REFINING COMPANY

In the East and Midwest
THE ATLANTIC REFINING COMPANY
Philadelphia • Pittsburgh • Providence
Charlotte • Chicago

On the West Coast
L. H. BUTCHER COMPANY
San Francisco • Los Angeles • Seattle
Salt Lake City • Portland • Oakland

In Canada
NAUGATUCK CHEMICALS
Division of Dominion Rubber Co., Ltd., Canada
Elmira • Montreal • Toronto • Windsor
Winnipeg • Saskatoon • Calgary

STEARIC ACID (Contd.)

Armour Chem. Div., Armour & Co., 1355 W. 31st St., Chicago
Arnold Hoffman & Co., 55 Canal St., Providence, R. I.
Atlas Powder Co., Wilmington, Del.
E. A. Bromund Co., 258 Broadway, N. Y. 7
John H. Calo Co., 19 Rector St., N. Y. 6
Celina Stearic Acid Co., Celina, Ohio
Century Stearic Acid Candle Wks., 41 E. 42nd St., N. Y.
Concord Chem. Co., Moorestown, N. J.
Darling & Co., 4201 S. Ashland Ave., Chicago
E. F. Drew & Co., 15 E. 26th St., N. Y. 10
Eastern Industries, Inc., Ridgefield, N. J.
Emery Industries, Inc., 4300 Carew Tower, Cincinnati
General Mills, Chemical Div., 400 2nd Ave., Minneapolis 1
A. Gross & Co., 295 Madison Ave., N. Y.
Griffin Chem. Co., 1000 16th St., San Francisco
Hardesty & Co., 60 E. 42nd St., N. Y.
W. C. Hardesty Co., 41 E. 42nd St., N. Y.
Innis, Speiden & Co., 117 Liberty St., N. Y.
Merck & Co., Rahway, N. J.
Orbis Products Corp., 215 Pearl St., N. Y.
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Werner G. Smith Co., 2191 W. 110th St., Cleveland
F. W. Steadman Co., 59 Pearl St., N. Y. 4
Swift & Co., Chicago 9
Theobald Industries, Kearny, N. J.
Arthur C. Trask Co., 4103 S. LaSalle St., Chicago 9
Welch, Holme & Clark Co., 439 West St., N. Y.
M. Werk Co., St. Bernard, Cincinnati
Whittaker, Clark & Daniels, 260 W. Broadway, N. Y.
Will & Baumer Candle Co., Syracuse, N. Y.
Wilson-Martin Co., Snyder Ave., & Swanson St., Phila.
Witco Chemical Co., 295 Madison Ave., N. Y.

STEARINE

(see also Brokers and Dealers)

E. A. Bromund Co., 258 Broadway, N. Y. 7
John H. Calo Co., 19 Rector St., N. Y. 6
Celina Stearic Acid Co., Celina, Ohio
Darling & Co., 4201 S. Ashland Ave., Chicago
E. F. Drew & Co., 15 E. 26th St., N. Y. 10
Durkee Famous Foods, Inc., 2670 Elston Av., Chicago
Eastern Industries, Inc., Ridgefield, N. J.
Emery Industries, Inc., 4300 Carew Tower, Cincinnati
Falk & Co., Pittsburgh 30
A. Gross & Co., 295 Madison Ave., N. Y. 17
Independent Mfg. Co., Bridesburg P. O., Phila.
Morris Co., Union Stock Yards, Chicago
Pacific Vegetable Oil Corp., 62 Townsend St., San Francisco
Procter & Gamble Co., Cincinnati
Werner G. Smith Co., 2191 W. 110th St., Cleveland
Swift & Co., Union Stock Yards, Chicago
Welch, Holme & Clark Co., 439 West St., N. Y.
Wilson & Co., 4100 Ashland Ave., Chicago
G. S. Ziegler & Co., 233 Broadway, N. Y.
Zohpar Mills, Inc., 112 26th St., Brooklyn, N. Y.

STEARINE PITCH

Allied Asphalt & Mineral Corp., 217 Broadway, N. Y.
Archer-Daniels-Midland Co., Minneapolis 2
Armour Chem. Div., Armour & Co., 1355 W. 31st St., Chicago
John H. Calo Co., 19 Rector St., N. Y. 6
Darling & Co., 4201 S. Ashland Ave., Chicago
E. F. Drew & Co., 15 E. 26th St., N. Y. 10
Eastern Industries, Inc., Ridgefield, N. J.
Emery Industries, Inc., 4300 Carew Tower, Cincinnati
General Mills, Chem. Div., 400 2nd Ave., Minneapolis 1
A. Gross & Co., 295 Madison Ave., N. Y.
W. C. Hardesty Co., 41 E. 42nd St., N. Y.
Procter & Gamble Co., Ivorydale, O.
Werner G. Smith Co., 2191 W. 110th St., Cleveland
Swift & Co., Chicago 9
Wilson & Co., 4100 Ashland Ave., Chicago
G. S. Ziegler & Co., 233 Broadway, N. Y.

STEARYL ALCOHOL (see Fatty Alcohols)

STEEL DRUMS (see Drums, Steel)

STEEL DRYING ROLLS (see Chilling Rolls)

STEEL PAILS (see Pails, Steel)

STEEL NICKEL CLAD, EQUIPMENT

Carnegie-Illinois Steel Co., 208 La Salle St., Chicago
International Nickel Co., 67 Wall St., N. Y.
Lukens Steel Co., Coatesville, Pa.
Republic Steel Corp., Republic Bldg., Cleveland, O.

STEEL TANKS (see Tanks, Steel)

STEEL, WOOL

American Steel Wool Mfg. Co., 41-24 Orchard St., L. I. City, N. Y.
Clarke Sanding Mach. Co., Muskegon, Mich. (Pads)
International Steel Wool Co., Springfield, Ohio
Multi-Clean Prods., Inc., 2277 Ford P'kway, St. Paul, Minn.
James H. Rhodes & Co., 157 W. Hubbard St., Chicago
Williams Co., London, Ohio

STOCK SPRAYS and DIPS (see Agricultural Insecticides)

STODDARD'S SOLVENT (see Solvents, Petroleum)

STORAGE TANKS (see Tanks, Storage, etc.)

SUDSING EQUIPMENT (see Soap Solutionizing Device)

SULFATED and SULFONATED FATTY ALCOHOLS (and other Non-Soap Organic Detergents and Derivatives (see also Detergents, Synthetic)

Alrose Chem. Co., Box 1294, Providence, R. I.
Antara Prods., Div. General Dyestuff Corp., 435 Hudson St., N. Y.
Carbide & Carbon Chemicals, 30 E. 42nd St., N. Y.
Carlstadt Chem. Co., Carlstadt, N. J.
Colgate-Palmolive-Peet Co., Jersey City, N. J.
E. F. Drew & Co., 15 E. 26th St., N. Y. 10
E. I. du Pont de Nemours Co., Wilmington, Del.
Emulsol Corp., 59 E. Madison St., Chicago
Hummel Chemical Co., 90 West St., N. Y.
N. I. Malmstrom & Co., 147 Lombardy St., Brooklyn
M. Michel & Co., 90 Broad St., N. Y.
Monsanto Chem. Co., 1700 S. 2nd St., St. Louis
National Aniline Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Nopco Chemical Co., Harrison, N. J.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2
Procter & Gamble Co., Cincinnati
Robinson Wagner Co., 110 E. 42nd St., N. Y.
Sandoz Chemical Works, 61 Van Dam St., N. Y.
Stepan Chem. Co., 1353 N. Branch St., Chicago 22
Ultra Chem. Wks., 2 Wood St., Paterson, N. J.
U. S. Industrial Chems., Inc., 60 E. 40th St., N. Y.
Jacques Wolfe & Co., Passaic, N. J.

SULFONATED OILS

American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
Antara Prods., Div. General Dyestuff Corp., 435 Hudson St., N. Y. 14
Arnold Hoffman & Co., 55 Canal St., Providence, R. I.
Atlantic Refining Co., 260 S. Broad St., Phila.
Burkhart-Schirr Chem. Co., Chattanooga 2, Tenn.
Carbide & Carbon Chem., 30 E. 42nd St., N. Y.
Carlstadt Chem. Co., Carlstadt, N. J.
Colloids, Inc., 395 Frelinghuysen Ave., Newark, N. J.
E. F. Drew & Co., 15 E. 26th St., N. Y. 10
E. I. du Pont de Nemours & Co., Wilmington
Eastern Industries, Inc., Ridgefield, N. J.
Emery Industries, 4300 Carew Tower, Cincinnati

YES SIR . . . FACOIL CS MEANS CONTINUOUS SUPPLY

Finding a continuous supply of fatty acid materials can be a problem—if you haven't heard about Facoil CS, developed especially for the manufacture of soaps and emulsifying agents.

Facoil CS is an economical source of fatty and rosin acids. Its color retention characteristics are outstanding. Its composition is rigidly controlled assuring uniformity.

Facoil CS has been successfully used in manufacturing bar laundry soaps, soap chips and powders. It has also been used in the preparation of antiseptic liquid soaps, metal cleaners, degreasing compounds and household specialties.

Facoil CS is only one of several grades of refined tall oils produced by National Southern Products Corporation. Facoil CB, Facoil GN and NSP-1303 find special application in many industries.

Samples of these products are available. Our laboratories are at your disposal for technical assistance in solving problems involving tall oil.

National Southern Products Corporation is supplying its old customers and will consider new customers as the supply dictates. It is our desire to furnish this super refined tall oil to all industries requiring it. However, during the present emergency our supply is limited.

N.S.P. TOPS IN TALL OIL

NATIONAL SOUTHERN PRODUCTS CORPORATION
REFINERY: TUSCALOOSA, ALABAMA
EXECUTIVE OFFICES: 630 FIFTH AVENUE, NEW YORK 20, N. Y.

SULFONATED OILS (Contd.)

Hercules Powder Co., Wilmington
Kali Mfg. Co., 427 Moyer St., Phila. 25
Nopco Chem. Co., Harrison, N. J.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2
Rare Chemicals, Inc., 1st and Essex Sts., Harrison, N. J.
Salem Oil & Grease Co., Salem, Mass.
Sandoz Chemical Works, 61 Van Dam St., N. Y.
L. Sonneborn Sons, 300—4th Ave., N. Y. 10
Stepan Chem. Co., 1353 N. Branch St., Chicago 22
Swift & Co., Chicago 9
Arthur C. Trask Co., 4103 S. La Salle St., Chicago
Ultra Chem. Wks., 2 Wood St., Paterson, N. J.
Welch, Holme & Clark Co., 439 West St., N. Y.
Jacques Wolfe & Co., Passaic, N. J.

SULFOXYLATES (Soap Bleaches)

Rohm & Haas Co., Inc., 222 W. Washington Sq., Phila.
Jacques Wolfe & Co., Passaic, N. J.

SULFUR CANDLES

Koppers Co., Koppers Bldg., Pittsburgh 19
Reliable Chemical Co., Passaic, N. J.

SUPERFATTING AGENTS (for Toilet Soaps)

Alrose Chem. Co., Box 1294, Providence, R. I.
Antara Prods. Div., General Dyestuff Corp., 435 Hudson St., N. Y. 14
E. F. Drew & Co., 15 E. 26th St., N. Y. 10
N. I. Malmstrom & Co., 147 Lombardy St., Brooklyn
M. Michel & Co., 90 Broad St., N. Y.
Nopco Chem. Co., Harrison, N. J.
Pfaltz & Bauer, 350 5th Ave., N. Y.
Pylam Products Co., 799 Greenwich St., N. Y.
Robinson Wagner Co., 110 E. 42nd St., N. Y.
Welch, Holme & Clark Co., 439 West St., N. Y.

SUPERHEATERS

Eureka Machine Co., 2601 Vega Ave., Cleveland
Ernest Scott & Co., Fall River, Mass.
The Superheater Co., 60 E. 42nd St., N. Y.

SURGICAL SOAPS (see Potash Soaps)

SWEEPING COMPOUNDS

American Excelsior Corp., 1000 N. Halstead St., Chicago
American Soap & Washoline Co., Cohoes, N. Y.
Banner Chemical Prod. Corp., 60 Elm St., Newark, N. J.
Baums Castorine Co., 200 Matthews St., Rome, N. Y.
Chem. Service Co. of Baltimore, Balto. 30
Chicago Sanitary Prods. Co., 3100 S. Throop St., Chicago
Creco Co.; Inc., Creco Bldg., Long Island City, N. Y.
Eagle Soap Corp., Huntington, Ind.
Filtrol Corp., 727 W. 7th St., Los Angeles
Fuld Bros., 702 S. Wolfe St., Baltimore
Higley Chemical Co., Dubuque, Iowa
R. M. Hollingshead Corp., Camden, N. J.
Hygiene Products, 169 St. Cyr, Montreal, Canada
Hysan Products Co., 932 W. 38th Place, Chicago
Kearny Mfg. Co., Kearny, N. J.
Klix Chem. Co., 2460 Third St., San Francisco
Frank Miller & Sons, 2240 W. 58th St., Chicago
Murro Chemical Co., P. O. Box 185, Asheville, N. C.
Natl. Sawdust Co., 69 N. 6th St., Bklyn.
North Coast Soap & Chem. Wks., Seattle, Wash.
Pacific Chem. Co., 1421 N. Main St., Los Angeles
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Pioneer Mfg. Co., Cleveland, O.
Port Huron Detergent Co., Port Huron, Mich.
Puritan Chem. Co., 209 Peters St., N. W. Atlanta
Riverside Chem. Co., N. Tonawanda, N. Y.
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Sanco Prods. Inc., Greenville, O.
Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
Savin Products Co., 1221 Dorchester Ave., Boston 25
E. B. Snyder Co., 2137 E. Harold St., Philadelphia
Solshine Mfg. Co., 412—2nd St., Fall River, Mass.
Standard Chem. Co., 213 Jackson St., Houston, Tex.
Sweeping Compound Mnfrs. Co., 421 Broome St., N. Y.
Tesco Chem. Co., P. O. Box 4748, Atlanta
Uncle Sam Chemical Co., 573 W. 131st St., N. Y. C.
U. S. Sanitary Specialties Corp., 1003 S. California Blvd., Chicago 12

SYNTHETIC DETERGENTS (see Detergents, Synthetic)

SYNTHETIC INSECTICIDE CONCENTRATES (see Insecticide Concentrates, Synthetic)

SYNTHETIC RESINS (see Resins, Synthetic)

SYNTHETIC WAXES (see Waxes, Synthetic)

TALC

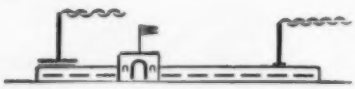
American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
Binney & Smith Co., 41 E. 42nd St., N. Y.
Blue Ridge Talc Co., Henry, Va.
Chas. B. Chrystal Co., 53 Park Pl., N. Y.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Eastern Magnesia Talc Co., Burlington, Vt.
Enco Chem. Corp., 441 Lexington Ave., N. Y.
Fezandie & Sperrle, 205 Fulton St., N. Y.
Georgia Talc Co., Asheville, N. C.
K. F. Griffiths & Co., 110 E. 42nd St., N. Y.
Innis Speiden & Co., 117 Liberty St., N. Y.
Los Angeles Talc Co., Los Angeles, Cal.
Miller Prods. Co., 1932 S. W. Water Ave., Portland, Ore.
Natura Minerals Co., 108 W. 6th St., Los Angeles
Orbis Products Corp., 215 Pearl St., N. Y.
Pacific Coast Talc Co., Los Angeles, Cal.
R. F. Revson Co., 144 W. 18th St., N. Y.
James H. Rhodes & Co., 157 W. Hubbard St., Chicago
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
L. A. Salomon & Bro., 216 Pearl St., N. Y.
F. E. Schundler & Co., Joliet, Ill.
Tamms Industries, Inc., 228 N. La Salle St., Chicago
Union Talc Co., 147 Nassau St., N. Y.
R. T. Vanderbilt Co., 230 Park Ave., N. Y.
Chas. A. Wagner Co., 813 Callowhill St., Phila.
Welch, Holme & Clark Co., Inc., 439 West St., N. Y.
Whittaker, Clark & Daniels, 260 W. Broadway, N. Y.
Witco Chemical Co., 295 Madison Ave., N. Y.
Wyodak Chemical Co., 4600 E. 71st St., Cleveland

TALL OIL (TALLOL)

Arizona Chemical Co., 30 Rockefeller Plaza, New York
Brunswick Pulp & Paper Co., Brunswick, Ga.
John H. Calo Co., 19 Rector St., N. Y. 6
Camp Manufacturing Co., Franklin, Va.
Champion Paper & Fibre Co., Canton, N. C.
John A. Chew, Inc., 60 E. 42nd St., N. Y. 17
Concord Chemical Co., Moorestown, N. J.
Continental Can Co., Hummel-Ross Division, Hopewell, Va.
Falk & Co., Pittsburgh 30
Gaylord Container Corp., 111 North Fourth St., St. Louis
Gulf States Paper Co., Tuscaloosa, Ala.
National Southern Products Corp., 630 Fifth Avenue, New York
Newport Industries, Inc., 230 Park Avenue, New York
North Carolina Pulp Co., Camden, N. J.
Werner G. Smith Co., 2191 W. 110th St., Cleveland 2
Southern Advance Bag & Paper Co., 38 Newbury St., Boston
Union Bag & Paper Corp., 233 Broadway, New York
Welch, Holme & Clark Co., 439 West St., N. Y. 14
West Virginia Pulp & Paper Co., 230 Park Ave., New York

ALLIED STEEL & EQUIPMENT CO.

manufactures



Equipment for YOUR plant

• • • • • • • • •

laboratory mixers

small batch soap equipment

portable agitators

powder mixers

blenders

paste mixers

crutchers

soap kettles

batch tanks

bulk storage tanks

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STOCK DESIGN OR FABRICATED TO ORDER

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INQUIRIES INVITED

ALLIED STEEL & EQUIPMENT CO.

CHEMICAL EQUIPMENT

DEPT. S. CHESTER, NEW JERSEY

TALLOW and GREASE

(see also Brokers and Dealers)

Armour & Co., 1355 W. 31st St., Chicago
Belleville Rendering Co., Belleville, Ill.
Borne Scrymser Co., 632 S. Front St., Elizabeth, N. J.
Consolidated Rendering Co., 178 Atlantic Ave., Boston
Cudahy Packing Co., 111 W. Monroe St., Chicago
Darling & Co., 4201 S. Ashland Ave., Chicago
Eastern Industries, Inc., Ridgefield, N. J.
Falk & Co., Pittsburgh 30
Otto A. C. Hagen Corp., Public Ledger Bldg., Phila.
Tasselman, Seaman, de Ryss, Inc., 347 Madison Ave., N. Y. 17
Independent Mfg. Co., Bridesburg P. O., Phila.
Long Island Soap Co., 29 Bridgewater St., Brooklyn
Louisville Butchers' Hide & Tallow Co., Louisville, Ky.
Newman Tallow & Soap Mach. Co., 1051 W. 35th, Chicago
Willibald Schaefer Co., Foot of Bremen Ave., St. Louis
Werner G. Smith Co., 2191 W. 110th St., Cleveland
Swift & Co., Union Stock Yards, Chicago
Theobald Industries, Kearny, N. J.
Toledo Tallow Co., Toledo, Ohio
Waltham Tallow Co., Waltham, Mass.
Wayne Soap Co., Detroit
Welch, Holme & Clark Co., Inc., 439 West St., N. Y.
Wilson & Co., Union Stock Yards, Chicago
Wilson-Martin Co., Swanson St., Phila.

TALLOW CHIP SOAP (see Chip Soaps)

TALLOW OIL

(see also Brokers and Dealers)

Armour & Co., 1355 W. 31st St., Chicago
Consolidated Rendering Co., 40 N. Market St., Boston
Cudahy Packing Co., 111 W. Monroe St., Chicago
Eastern Industries, Inc., Ridgefield, N. J.
Griffin Chem. Co., 1000 16th St., San Francisco
W. C. Hardesty Co., 41 E. 42nd St., N. Y.
Independent Mfg. Co., Bridesburg, P. O., Phila.
John T. Stanley Co., 642 W. 30th St., N. Y.
Swift & Co., Union Stock Yards, Chicago
Toledo Tallow Co., Toledo, Ohio
Waltham Tallow Co., Waltham, Mass.
Welch, Holme & Clark Co., 439 West St., N. Y.
West Coast Fert. & Rendering Co., Los Angeles
Wilson & Co., Union Stock Yards, Chicago

TANKS (Glass Lined Mixing and Storage)

Allied Steel & Equipt. Co., Chester, N. J.
Alsop Engineering Corp., 103 Green St., Milldale, Conn.
Consolidated Products Co., 15 Park Row, N. Y. (Used)
Edge Moor Iron Wks., 30 Rockefeller Plaza, N. Y.
Filter Paper Co., 2464 S. Michigan Ave., Chicago
First-Machy. Corp., 157 Hudson St., N. Y. (Used)
Littleford Bros., 453 E. Pearl St., Cincinnati
Metal Glass Products Corp., Belding, Mich.
Mixing Equipment Co., 167 Mt. Read Blvd., Rochester, N. Y.
Newman Tallow & Soap Mach. Co., 1051 W. 35th, Chicago
Pfaudler Co., 89 East Ave., Rochester, N. Y.
H. K. Porter Co., 49th & Harrison Sts., Pittsburgh
Geo. G. Rodgers Co., 225 W. 34th St., N. Y.
Chas. Ross & Son Co., 148 Classon Ave., Bklyn. 5
Satisfaction Supply Co., 508 W. Broadway, N. Y. 12
Scientific Filter Co., 1 Franklin Sq., N. Y.
Sprout, Waldron & Co., Muncy, Pa.

TANKS (for Liquid Soap Dispensing Systems)

Ampion Corp., 4-88—Forty-seventh Ave., L. I. City, N. Y.
Antiseptol Co., 5524 Northwest Highway, Chicago
Bobrick Mfg. Corp., 1841 Blake Ave., Los Angeles
Brighton Copper Works, 2163 Western Ave., Cincinnati
Clifton Chemical Co., 62 William St., N. Y.
Eagle Soap Corp., Huntington, Ind.
Fuld Bros., Inc., 702 S. Wolfe St., Baltimore
R. M. Hollingshead Corp., Camden, N. J.
Hysan Products Co., 932 W. 38th Place, Chicago
Imperial Brass Co., 1200 W. Harrison St., Chicago

TANKS (For Liquid Soap Dispensing Systems) (Contd.)

International Engineering, 1145 Bolander Ave., Dayton, Ohio
Palmer Fixture Co., Waukesha, Wisc.
John Trageser Steam Copper Works, Grand Ave., Maspeth, L. I., N. Y.
Uncle Sam Chemical Co., 575 W. 131st St., N. Y. 27
U. S. Sanitary Specialties Corp., 1003 S. California Ave., Chicago 12
West Disinfecting Co., Long Island City, N. Y.

TANKS (Steel Clad-Steel, etc., for Mixing, Storage, etc.)

Allied Steel & Equipt. Co., Chester, N. J.
Alloy Prods. Corp., 221 Madison St., Waukesha, Wis.
Alsop Engineering Corp., 103 Green St., Milldale, Conn.
Atlas Steel Construction Co., Irvington, N. Y.
S. Blickman, Inc., 72 Gregory Ave., Weehawken, N. J.
S. F. Bowser & Co., Ft. Wayne, Ind.
Carnegie-Illinois Steel Corp., 208 La Salle St., Chicago
Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
J. H. Day Co., 1144 Harrison Ave., Cincinnati
Edge Moor Iron Wks., Edge Moor, Del.
Filter Paper Co., 2464 S. Michigan Ave., Chicago
First Machy. Corp., 157 Hudson St., N. Y. (Used)
William Garrigue & Co., 9 S. Clinton St., Chicago
General American Transportation Corp., 135 S. LaSalle St., Chicago
Graver Tank & Mfg. Corp., 332 S. Michigan, Chicago
Houchin Machinery Co., Hawthorne, N. J.
Hudson Mfg. Co., 589 E. Illinois St., Chicago
Industrial Process Engineers, 8 Lister Ave., Newark 8 N. J.
International Engineering, 1145 Bolander Ave., Dayton, O.
Lancaster Iron Works, 564 S. Prince St., Lancaster, Pa.
J. M. Lehmann Co., 566 New York Ave., Lyndhurst, N. J.
Littleford Bros., 453 E. Pearl St., Cincinnati
Lukens Steel Corp., Coatesville, Pa.
Mixing Equipment Co., 1067 Garson Ave., Rochester
Newman Tallow & Soap Mach. Co., 1051 W. 35th St., Chicago (Used)
Patterson-Kelley Co., East Stroudsburg, Pa.
Petroleum Iron Works, Sharon, Pa.
Pfahler Cleland Co., Galion, O.
Pfaudler Co., Rochester, N. Y.
Pioneer Tank & Boiler Co., Tulsa, Okla.
H. K. Porter Co., 49th & Harrison Sts. Pittsburgh
Project Fabrication Corp., 39 Broadway, N. Y. 6
Read Machy. Co., York, Pa.
Geo. G. Rodgers Co., 225 W. 34th St., N. Y.
Chas. Ross & Son Co., 148 Classon Ave., Bklyn. 5
Satisfaction Supply Co., 508 W. Broadway, N. Y. 12
Sprout, Waldron & Co., Muncy, Pa.
Struthers-Wells Corp., Warren, Pa.
John Trageser Steam Copper Works, Grand St., Maspeth, L. I., N. Y.
Valley Foundry & Machine Works, 710 H St., Fresno 10, Calif.

TANKS (Wooden, Mixing, Storage, etc.)

Atlantic Tank & Barrel Co., North Bergen, N. J.
J. H. Day Co., 1144 Harrison Ave., Cincinnati
General Tank Corp., 30 Church St., N. Y.
Hauser-Stander Tank Co., Ivorydale, Cinn.
H. D. Hudson Mfg., 589 E. Illinois St., Chicago
Kalamazoo Tank & Silo Co., Kalamazoo, Mich.
New England Tank & Tower Co., Everett, Mass.
Pacific Tank & Pipe Co., 334 Market St., San Francisco
H. K. Porter Co., 49th & Harrison Sts., Pittsburgh
Read Machy. Co., York, Pa.
Sprout, Waldron & Co., Muncy, Pa.
Tippett & Wood, Phillipsburg, N. J.

TAR ACID OIL (see Coal Tar Raw Materials)

TAR ACIDS, High Boiling

American-British Chem. Supplies, Inc., 180 Madison Ave., N. Y.
Baird & McGuire, Inc., Holbrook, Mass.
Barrett Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
John H. Calo Co., 19 Rector St., N. Y. 6
Coal Tar Chemicals Corp., 420 Lexington Ave., N. Y.
Concord Chemical Co., Moorestown, N. J.
E. I. du Pont de Nemours & Co., Wilmington, Del.
James Huggins & Son, 239 Medford St., Malden, Mass.
Koppers Co., Koppers Bldg., Pittsburgh, Pa.
Mirvale Chem. Co., Ltd., Mirfield, Yorks, England
Monsanto Chemical Co., 1700 S. 2nd St., St. Louis
Neville Co., Pittsburgh
Reilly Tar & Chem. Co., Indianapolis
Tar Residuals, Inc., 420 Lexington Ave., N. Y. 17
Shell Chemical Corp., 500 5th Ave., N. Y. 18
James Varley & Sons, 1200 Switzer Ave., St. Louis

TEASEED OIL

T. G. Cooper & Co., 2400 E. Vanango St., Phila. 34
Eastern Industries, Inc., Ridgefield, N. J.
E. M. Sergeant Chemical Co., 7 Dey St., N. Y.
Welch, Holme & Clarke Co., 439 West St., N. Y. 14

TERPENYL ACETATE (see Aromatic Chemicals)

TERPINEOL

(see also Essential Oils)

Aromatic Products, Inc., 15 E. 30th St., N. Y.
Crosby Chemicals, Inc., De Ridder, La.
Dodge & Olcott, Inc., 180 Varick St., N. Y.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Felton Chemical Co., 603 Johnson Ave., Brooklyn, N. Y.
Firmenich & Co., 250 W. 18th St., N. Y.
Fritzsche Bros., 76—9th Ave., N. Y. 11
Givaudan-Delawanna, Inc., 330 W. 42nd St., N. Y.
Hercules Powder Co., Wilmington
Magnus, Mabee & Reynard, 16 Desbrosses St., N. Y. 13
Polak's Frutal Wks., 33 Sprague Ave., Middletown, N. Y.
Schimmel & Co., 601 W. 26th St., N. Y. 1
Ungerer & Co., 161 Ave. of Americas, N. Y. 13
van Ameringen-Haebler, Inc., 521 W. 57th St., N. Y.
Verona Chem. Co., 26 Verona Ave., Newark, N. J.

TEST KITS

Bersworth Chemical Co., Framingham, Mass. (water hardness)
Cargille Scientific, Inc., 118 Liberty St., N. Y. 6 (chlorine and quaternary)
Eimer & Amend, 633 Greenwich St., N. Y.
Will Corp., Rochester, N. Y.

TETRACHLORETHYLENE (see Solvents, Organic)

TETRASODIUM PYROPHOSPHATE

American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
Blockson Chemical Co., Joliet, Ill.
John A. Chew, Inc., 60 E. 42nd St., N. Y. 17
General Chemical Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y. 6
E. I. du Pont de Nemours & Co., Wilmington, Del.
A. R. Maas Chem. Co., South Gate, Calif.
Monsanto Chemical Co., 1700 S. 2nd St., St. Louis
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Victor Chem. Wks., 141 W. Jackson Blvd., Chicago
Virginia-Carolina Chem. Corp., Richmond 5, Va.
Welch, Holme & Clark Co., 439 West St., N. Y.
Westvaco Chem. Div., Food Machy. & Chem. Corp., 405 Lexington Ave., N. Y.

TEXTILE SOAPS

Alrose Chem. Co., Box 1294, Providence, R. I.
American Soap & Washoline Co., Cohoes, N. Y.
Armour Soap Wks., 1355 W. 31st St., Chicago
Arnold, Hoffman & Co., 55 Canal St., Providence, R. I.
Atlas Powder Co., Wilmington 99, Dela.
Beach Soap Co., Lawrence, Mass.

TEXTILE SOAPS (Contd.)

Carlstadt Chem. Co., Carlstadt, N. J.
Chemical Mfg. & Dist. Co., Easton, Pa.
Chem. Service Co. of Balto., Howard & West Sts., Balto.
Clarkson Co., 919 N. 9th St., Phila. 23
Clifton Chemical Co., 62 William St., N. Y.
Colgate-Palmolive-Peet Co., Jersey City, N. J.
Draper Soap Co., 171 Front St., Pawtucket, R. I.
E. F. Drew & Co., 15 E. 26th St., N. Y. 10
E. I. du Pont de Nemours & Co., Wilmington, Del.
Eagle Soap Corp., Huntington, Ind.
J. Eavenson & Sons, Del. & Penn Sts., Camden, N. J.
Enterprise Mill Soap Wks., 2231 N. 12th St., Philadelphia
Essential Chem. Co., 744 N. 4th St., Milwaukee 3
General Biochemicals, Inc., Chagrin Falls, Ohio
Haag Labs., 140th & Seeley Ave., Blue Island, Ill.
Hygiene Products, 169 St. Cyr, Montreal, Canada
Hysan Prods. Co., 932 W. 38th Place, Chicago
Iowa Soap Co., 810 Valley St., Burlington, Ia.
Kearny Mfg. Co., Kearny, N. J.
Kessler Chem. Co., State Rd., Phila. 35
Knox-All Corp., 1005 E. Sumner Ave., Indianapolis
H. Kohnstamm & Co., 91 Park Pl., N. Y.
Laurel Soap Mfg. Co., Tioga St., Phila.
Long Island Soap Co., Meeker Ave. & Bridgewater St., Brooklyn, N. Y.
Los Angeles Soap Co., Los Angeles, Cal.
Masury Young Co., 76 Roland St., Boston 29
M. Michel & Co., 90 Broad St., N. Y.
Miranol Chemical Co., 16 Mellville Pl., Irvington, N. J.
Murro Chemical Co., P. O. Box 185, Asheville, N. C.
National Soap Co., 357 South 26th St., Tacoma, Wash.
National Southern Products, 630 5th Ave., N. Y. 20
Newell Gutradt & Co., 350 Fremont St., San Francisco
Nopco Chem. Co., Harrison, N. J.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Procter & Gamble Co., Cincinnati
Puritan Soap Co., 573 Lyell Ave., Rochester, N. Y.
Quaker Chem. Prods. Co., Conshohocken, Pa.
Refined Prods. Corp., Lyndhurst, N. J.
Rome Soap Mfg. Co., N. Y.
Sandoz Chemical Works, 61 Van Dam St., N. Y.
Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
Scholler Bros., 3301 Amber St., Philadelphia
Geo. E. Sherman Co., 153 Classon Ave., Brooklyn, N. Y.
E. B. Snyder Labs., 2137 E. Harold St., Phila. 25
John T. Stanley Co., 642 W. 30th St., N. Y.
Superior Soap Corp., 121 Nostrand Ave., Brooklyn
Swift & Co., Union Stock Yards, Chicago
Ultra Chem. Wks., Inc., 2 Woods St., Paterson, N. J.
Warren Soap Mfg. Co., 51 Waverly St., Cambridge, Mass.
M. Werk Co., St. Bernard, Cincinnati
Jacques Wolf & Co., Passaic, N. J.
Chas. W. Young & Co., 1247 N. 26th St., Phila.

TEXTILE SODA (see Soda)

TEXTILE SPECIALTIES (Oils, Softeners, etc.)

Alrose Chem. Co., Box 1294, Providence, R. I.
American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
Arabol Mfg. Co., 110 E. 42nd St., N. Y. 17
Arnold, Hoffman & Co., 55 Canal St., Providence, R. I.
Atlas Powder Co., Wilmington, Del.
Bersworth Chemical Co., Framingham, Mass.
Borne Scrymser Co., 632 S. Front St., Elizabeth, N. J.
Burkhart-Schirr Chem. Co., Chattanooga 2, Tenn.
Carbide & Carbon Chem., 30 E. 42nd St., N. Y.
Carlstadt Chem. Co., Carlstadt, N. J.
Chemical Service Co., of Baltimore, Balto. 30
Clarkson Co., 919 N. 9th St., Phila. 9
Commercial Solvents Corp., 17 E. 42nd St., N. Y.
Cowles Chemical Co., 7016 Euclid Ave., Cleveland
J. O. Draper Co., Pawtucket, R. I.
E. F. Drew & Co., 15 E. 26th St., N. Y. 10
E. I. du Pont de Nemours & Co., Wilmington, Del.
Emery Industries, Inc., Carew Tower, Cincinnati
Emulsol Corp., 59 E. Madison St., Chicago
Enterprise Mill Soap Wks., 2231 N. 12th St., Philadelphia
Essential Chems. Co., 744 N. 4th St., Milwaukee 3
Franklin Research Co., 5134 Lancaster Ave., Phila.
Geigy Co., 89 Barclay St., New York
General Dyestuff Corp., 435 Hudson St., N. Y.
Glyco Products Co., 26 Court St., Bklyn., N. Y.
W. C. Hardesty Co., 41 E. 42nd St., N. Y.
Hercules Powder Co., Wilmington, Del.
Heyden Chemical Corp., 393 7th Ave., N. Y. 1
Kearny Mfg. Co., Kearny, N. J.
Knox-All Corp., 1005 E. Sumner Ave., Indianapolis
Laurel Soap Mfg. Co., Tioga St., Phila., Pa.
Masury Young Co., 76 Roland St., Boston 29
M. Michel & Co., 90 Broad St., N. Y.
Miranol Chemical Co., 16 Melville Pl., Irvington, N. J.
Monsanto Chem. Co., St. Louis 4
Murro Chemical Co., P. O. Box 185, Asheville, N. C.
Napthole, Inc., 15 E. 26th St., N. Y.
National Aniline Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
National Soap Co., 357 South 26th St., Tacoma, Wash.
National Starch Prods. Co., 820 Greenwich St., N. Y.
Nopco Chem. Co., Harrison, N. J.
Onyx Oil & Chemical Co., Warren & Morris Sts., Jersey City 2
Pennsylvania Refining Co., Butler, Pa.
Protean Chemical Corp., 150 Nassau St., N. Y. 7
Publicker Industries, 1429 Walnut St., Phila. 2
Quaker Chem. Prods. Co., Conshohockon, Pa.
Rumford Chemical Wks., Rumford 16, R. I.
Sandoz Chemical Works, 61 Van Dam St., N. Y.
Scholler Bros., 3301 Amber St., Philadelphia
Geo. E. Sherman Co., 153 Classon Ave., Brooklyn, N. Y.
Skotch Prods. Corp., 2710 Detroit Ave., Cleveland
Swift & Co., Chicago 9
L. Sonneborn Sons, 300—4th Ave., N. Y. 10
Ultra Chem. Works, Inc., 2 Wood St., Paterson, N. J.
Washine-National-Sands, Inc., 37-02 Northern Blvd., Long Island City, N. Y.
Woburn Chemical Corp., Harrison, N. J.
Jacques Wolf & Co., Passaic, N. J.
Chas. W. Young & Co., 1247 N. 26th St., Phila.

THALLIUM SULFATE

Foote Mineral Co., 1609 Summer St., Phila.
Heckathorn & Co., Richmond, Calif.
Merck & Co., Rahway, N. J.
Pfaltz & Bauer, Inc., 350—5th Ave., N. Y.
Rosenthal Bercow Co., 25 E. 26th St., N. Y.

THEATRE SPRAYS

Albert Albek, Inc., 3573 Haydon Ave., Culver City, Calif.
A-M-R Chem. Co., 985 E. 35th St., Bklyn. 10
Antiseptol Co., 5524 Northwest Highway, Chicago
Banner Chemical Prod. Corp., 60 Elm St., Newark, N. J.
Baums Castorine Co., 200 Mathew St., Rome, N. Y.
Brilco Labs., 1553-63rd St., Bklyn.
Cadet Laboratories, 10 Clarence St., Worcester 5, Mass.
Cenol Co., 4250 Pulaski Ave., Chicago
Chemical Compounding Corp., 262 Huron St., Brooklyn
Chemical Mfg. & Dist. Co., Easton, Pa.
Chem. Service Co. of Balto., Howard & West Sts., Balto.
Chicago Sanitary Prods. Co., 3100 Throop St., Chicago
Churchill Mfg. Co., Galesburg, Ill.
Clifton Chemical Co., 62 William St., N. Y.
Connecticut Chemical Research Corp., Bridgeport 5, Conn.
Continental Car-Na-Var Corp., Brazil, Ind.
Eagle Soap Corp., Huntington, Ind.
Elkay Products Corp., 323 W. 16th St., N. Y.
Fuld Bros., 702 S. Wolfe St., Baltimore
James Good, Inc., Kensington, Phila.
Gunning & Gunning, Inc., 601 W. 26th St., N. Y.
Higley Chemical Co., Dubuque, Iowa
Hunt Mfg. Co., Lisbon Rd., Cleveland
Hygiene Products, 169 St. Cyr, Montreal, Canada
Hysan Prods. Co., 932 W. 38th Place, Chicago
Jansen Soap & Chemical Co., 324 Leavenworth St., San Francisco, Cal.
Knoxall Corp., 1005 E. Sumner Ave., Indianapolis, Ind.
E. M. Laning Co., 433 Stuyvesant Ave., Irvington, N. J.

THEATER SPRAYS (Contd.)

Lorenz Chemical Co., 135 N. 32nd Ave., Omaha
Midland Labs., Dubuque, Ia.
Miller Prods. Co., 1932 S. W. Water Ave., Portland, Ore.
J. C. Paul & Co., 930 Roscoe St., Chicago 13
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Perry Bros., Inc., 220 Flushing Ave., Brooklyn
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Rochester Sanitary Prods. Co., 874 Seward St., Rochester, N. Y.
Science Industries, 609-15 Gever Ave., St. Louis
E. B. Snyder Labs., 2137 E. Harold St., Philadelphia
Tech Soap Co., S. Chicago Ave., & 73rd St., Chicago
Tesco Chem. Co., P. O. Box 4748, Atlanta
Thompson-Hayward Chem. Co., Kansas City 8, Mo.
Trio Chem. Wks., 341 Scholes St., Bklyn. 6
Uncle Sam Chemical Co., 573 W. 131st St., N. Y. C.
U. S. Sanitary Specialties Corp., 1003 S. California Blvd., Chicago 12
Victory Chem. Co., 148 Fairmount Ave., Phila.
G. H. Wood & Co., Toronto, Ont., Canada
Woodlets, Inc., Portland, Pa.
World Spray Co., Inc., 5117 Central Ave., Los Angeles
York Chemical Co., 23 Dean St., Bklyn.

THERMOMETERS (see Instruments)

THYME OIL (see Essential Oils)

THYMOL (see Aromatic Chemicals)

TIN CRYSTALS (Stannous Chloride)

American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
J. T. Baker Chem. Co., Phillipsburg, N. J.
E. I. du Pont de Nemours & Co., Wilmington, Del.
General Chemical Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Harshaw Chemical Co., 1945 E. 97 St., Cleveland
Metal & Thermit Corp., 120 Broadway, N. Y.

TITANIUM OXIDE (for toilet soaps)

Chemical & Pigment Co., St. Helena, Baltimore
E. I. du Pont de Nemours & Co., Wilmington, Del
Foote Mineral Co., 1609 Summer St., Phila.
Titanium Pigment Co., 111 Broadway, N. Y.
R. T. Vanderbilt Co., 230 Park Ave., N. Y.
Whittaker, Clark & Daniels, 260 W. Bdway., N. Y.
Witco Chemical Co., 295 Madison Ave., N. Y.

TOILET PAPER

A. P. W. Paper Co., Albany, N. Y.
Brown Co., Portland, Me.
Hoberg Paper & Fibre Co., Green Bay, Wisc.
Scott Paper Co., Chester, Pa.
Straubel Paper Co., Green Bay, Wis.
Victoria Paper Mills Co., Fulton, N. Y.
Wheeler Paper Co., 299 Madison Ave., N. Y.

TOILET PAPER HOLDERS

A. P. W. Paper Co., Albany, N. Y.
Palmer Fixture Co., Box 347, Waukesha, Wisc.
Scott Paper Co., Chester, Pa.

TOILET SOAPS (Private Label)

Armour Soap Wks., 1355 W. 31st St., Chicago
Baum's Castorine Co., Rome, N. Y.
Colgate-Palmolive-Peet Co., Jersey City, N. J.

For

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SOAP

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TOP QUALITY INGREDIENTS

by

MODERN SOAP-MAKING METHODS

and

TECHNICAL "KNOW-HOW"

for

ALL FINE SOAPS, SOAP FLAKES,

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6801 West 65th Street, Chicago, Illinois

TOILET SOAPS (Private Label) (Contd.)

Cudahy Packing Co., 221 N. LaSalle St., Chicago
Draper Soap Co., 171 Front St., Pawtucket, R. I.
J. Eavenson & Sons, Del & Penn Sts., Camden, N. J.
James Good Co., Susquehanna Ave., & Martin St., Phila.
Haag Labs., Inc., P. O. Box 114, Blue Island, Ill.
Hewitt Soap Co., Dayton, O.
Long Island Soap Co., 29 Bridgewater St., Brooklyn
Lightfoot Schultz Co., 1412 Park Ave., Hoboken, N. J.
Los Angeles Soap Co., Los Angeles, Cal.
Midland Laboratories, Dubuque, Iowa
National Soap Co., Box 1613, Tacoma, Wash.
Newell, Gutradt Co., 350 Fremont St., San Francisco
North Coast Soap & Chem. Wks., Seattle, Wash.
Peck's Products, 610 E. Clarence Ave., St. Louis
Procter & Gamble, Cincinnati
Reinitz Soap Corp., 46-44 11th St., Long Island City, N. Y.
Schmidt Soap Products Co., 236 W. North Ave., Chicago
E. B. Snyder Labs., 2137 E. Harold St., Phila. 25
John T. Stanley Co., 642 W. 30th St., N. Y.
Swift & Co., Chicago
Tech Soap Mfg. Co., S. Chicago Ave. & 73rd St., Chicago
Vliet Soap Co., 638 Monroe St., Brooklyn
Warren Soap Mfg. Co., 51 Waverly St., Cambridge, Mass.
M. Werk Co., St. Bernard, Cincinnati
Wolf Creek Soap Co., Dayton, Ohio
Allen B. Wrisley Co., 6801 W. 65th St., Chicago

TOILET PREPARATIONS (Private Label)

(see also Bath Salts, Shampoos, etc.)

Allied Products, Inc., Suffern, N. Y.
G. Barr & Co., 1132 37th St., Chicago 9
Corn King Co., Cedar Rapids, Ia.
Fuld Bros., 702 S. Wolfe St., Baltimore 3
R. Gesell, Inc., 200 W. Houston, N. Y.
Lightfoot Schultz Co., 1412 Park Ave., Hoboken, N. J
Schmidt Soap Products Co., 236 W. North Ave., Chicago
Shores Co., Cedar Rapids, Ia.
John T. Stanley Co., 642 W. 30th St., N. Y.
G. H. Wood & Co., Toronto, Ont., Canada
Woodlets, Inc., Portland, Pa.
Allen B. Wrisley Co., 6801 W. 65th St., Chicago

TOILET SEAT COVERS

Lorco Industries, Clarke & Hornet Sts., Cincinnati
Morton Mfg. Co., 5105 W. Lake St., Chicago
National Towel Bendon Ltd., 12 Stewart St., San Francisco
Protecto Prods. Co., 1450 W. Holt St., Ponoma, Calif.
Sani-Gard Cover Co., 411 W. 5th St., Los Angeles

TOILET SOAP BASE (for Cakes)

Armour Soap Wks., 1355 W. 31st St., Chicago
Colgate-Palmolive-Peet, Co., Jersey City, N. J.
Hewitt Soap Co., Dayton, O.
Los Angeles Soap Co., Los Angeles, Cal.
Nopco Chem. Co., Harrison, N. J.
Peck's Products, 610 E. Clarence Ave., St. Louis
Procter & Gamble Co., Cincinnati
Schmidt Soap Products Co., 236 W. North Ave., Chicago
Swift & Co., Chicago 9
John T. Stanley Co., 642 W. 30th St., N. Y.
Allen B. Wrisley Co., 6801 W. 65th St., Chicago

TOILET SOAP MILLS (see Soap Machinery)

TOXAPHENE

Hercules Powder Co., Wilmington 99, Del.

TOXAPHENE FORMULATIONS (Bases and Finished Sprays and Powders)

Acock Laboratories, 2700 E. 5th St., Austin, Tex.
Agricultural Chemical Co., 18th & E. Jackson Sts., Phoenix, Ariz.
Agricultural Chemicals, Llano, Texas
Agricultural Sulphur & Chem. Co., 417 N. Perry St., Montgomery, Ala.
Allied Chemical & Dye Corp., 40 Rector St., N. Y.
Ashcraft-Wilkinson Co., Trust Co. of Georgia Bldg., Atlanta, Ga.
Atlas Chem. Corp., Waynesboro, Ga.
Balcom Industries, 600-601 Tenth St., Greeley, Colo.
California Spray-Chemical Corp., Richmond, Calif.
Central Chem. Co., 49 N. Jonathan St., Hagerstown, Md.
Chapman Chem. Co., 38 Court St., Memphis, Tenn.
Chipman Chem. Co., Bound Brook, N. J.
William Cooper & Nephews, 1909 Clifton St., Chicago
Durham Chem. Co., 4124 E. Pacific Way, Los Angeles
Epting Distributing Co., Leesville, S. C.
Flag Sulphur & Chem. Co., Tampa, Fla.
Florida Agricultural Supply Co., Box 658, Jacksonville, Fla.
Food Machy. Corp., Niagara Sprayer & Chem. Div., Middleport, N. Y.
Fresno Agricultural Chem. Co., Fresno, Calif.
Geigy Co., Inc., 89-91 Barclay St., New York
Georgia-Carolina Oil Co., 1403 Sixth St., Macon, Ga.
Hammond Paint & Chem. Co., 411 River St., Beacon, N. Y.
Hayes-Sammons Co., Mission, Texas
Kolker Chemical Works, 80 Lister Ave., Newark 5, N. J.
Kwik-Way Chem. Co., Box 2536, San Antonio, Texas
O. E. Linck Co., Route 6 & Valley Rd., Clifton, N. J.
Los Angeles Chem. Co., 1960 S. Sante Fe Ave., Los Angeles
Mathieson Chemical Co., 10 Light St., Balto.
McConnon and Co., 328 E. 3rd St., Winona, Minn.
McLaughlin, Gormley, King Co., 1715 S. E. 5th St., Minneapolis
C. J. Martin & Sons, 413 Chicon St., Austin, Texas
Naco Fertilizer Co., Box 858, Charleston, S. C.
Naugatuck Chem. Div., U. S. Rubber Co., Naugatuck, Conn.
Occident Elevator Co., Div. of Russell Miller Milling Co., Billings, Montana
Pennsylvania-Salt Mfg. Co., 1000 Widener Bldg., Phila.
Phoenix Chem. Co., 19th Ave., & Roosevelt, Phoenix, Ariz.
Pittsburgh Agricultural Chem. Co., 350 Fifth Ave., N. Y.
Plainsman Supply Co., Plainview, Texas
Port Fertilizer & Chem. Co., Los Fresnos, Texas
John Powell & Co., 1 Park Ave., New York
Prentiss Drug & Chem. Co., 110 Williams St., N. Y.
Private Brands, Inc., 300 S. 3rd St., Kansas City, Kan.
Ralston Purina Co., 835 S. 8th St., St. Louis
Reasor-Hill Corp., Jacksonville, Ark.
Riverdale Chem. Co., 324—174th St., Harvey, Ill.
Severance Elevator Co., Severance, Colo.
Shell Chemical Corp., 500 5th Ave., N. Y. 18
Sherwin-Williams Co., 101 Prospect Ave., N.W., Cleveland
Southwest Co-operative Wholesale, 1821 E. Jackson St., Phoenix, Ariz.
Stauffer Chem. Co., 420 Lexington Ave., New York
Stauffer Chem. Co., 636 California St., San Francisco
Taylor Chem. Co., Aberdeen, N. C.
Thompson-Hayward Chem. Co., 2915 Southwest Blvd., Kansas City, Mo.
Tyner-Petrus Co., 100 Trenton St., West Monroe, La.
United Cooperatives, Inc., Fidelity-Phila. Trust Bldg., Philadelphia 9
F. H. Vahlsing, Inc., Elsa, Texas
Verhalen, Inc., Weslaco, Texas
Woolfolk Chemical Works, Fort Valley, Ga.

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S. C. Lawlor Co., 124 N. Aberdeen St., Chicago 7, Ill.
W. J. McElmoyl Co., Groveville, N. J.
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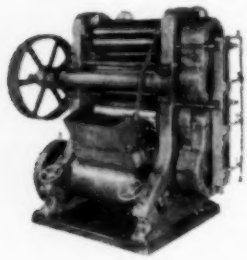

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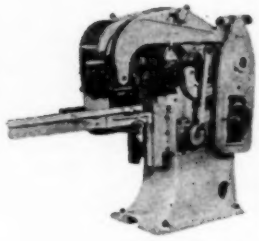

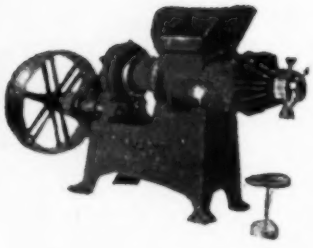

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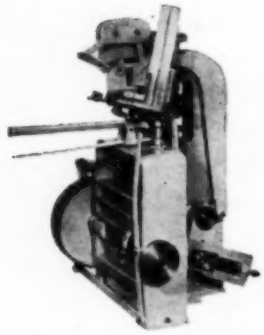

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Crystal Soap & Chem. Co., 6300 State Rd., Philadelphia
Davies-Young Soap Co., Dayton, O.
Fuld Bros., Inc., 702 S. Wolfe St., Baltimore
James Good, Inc., 2116 E. Susquehanna Ave., Phila.
Griffin Chem. Co., 1000 16th St., San Francisco
Hysan Prods. Co., 932 W. 38th Place, Chicago
Knoxall Corp., 1005 E. Sumner Ave., Indianapolis, Ind.
Kranich Soap Co., 60 Richards St., Bklyn.
Peck's Prods. Co., 610 E. Clarence Ave., St. Louis
Quaker Chem. Prods. Co., Conshohocken, Pa.
Sanitary Soap Co., 104 Railroad Ave., Paterson, N. J.
E. B. Snyder Labs., 2137 E. Harold St., Philadelphia
Trio Chemical Wks., 341 Scholes St., Bklyn. 6

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John A. Chew, Inc., 60 E. 42nd St., N. Y. 17
A. R. Maas Chemical Co., 4570 Ardine St., South Gate, Calif.
Monsanto Chem. Co., St. Louis 4
Virginia-Carolina Chem. Corp., Richmond 8, Va.
Victor Chemical Wks., 141 W. Jackson, Chicago
Westvaco Chem. Div., Food Machy. & Chem. Corp., 415 Lexington Ave., N. Y. 17

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(see also Brokers and Dealers)

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Blockson Chemical Co., Joliet, Ill.
John A. Chew, Inc., 60 E. 42nd St., N. Y. 17
E. I. du Pont de Nemours & Co., Wilmington, Del.
Emeryville Chem. Co., 405 Montgomery St., San Francisco
General Chemical Div., 40 Rector St., N. Y.
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Monsanto Chemical Co., 1700 S. 2nd St., St. Louis
Rosenthal Bercow Co., 25 E. 26th St., N. Y.
Jos. Turner & Co., Ridgefield, N. J.
Victor Chemical Works, 141 W. Jackson Blvd., Chicago
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Westvaco Chem. Div., Food Machy. & Chem. Corp., 405 Lexington Ave., N. Y.
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Frank G. Hough Co., Libertyville, Ill.
G. B. Lewis Co., Watertown, Wisc.
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Clevon Products Co., 27-31 Mechanic St., Buffalo
Arthur Colton Co., Detroit, Mich.
Consolidated Prod. Co., 15 Park Row, N. Y. (Used)
Filter Paper Co., 2464 S. Michigan Ave., Chicago
First. Machy. Corp., 157 Hudson St., N. Y. (Used)
Karl Kiefer Machine Co., 919 Martin St., Cincinnati
K. Diehl Mateer & Co., Devon 1, Pa.
Newman Tallow & Soap Machy. Co., 1051 W. 35th St., Chicago (Used)
Perl Machine Mfg. Co., 68 Jay St., Brooklyn 1
Geo. G. Rodgers Co., 225 W. 34th St., N. Y.
Scientific Filter Co., 2 Franklin Sq., N. Y. 10
F. J. Stokes Machine Co., 5918 Tabor Rd., Philadelphia

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Art Tube Co., Irvington, N. J.
Bond Penn Tube Co., 501 Monroe St., Wilmington, Del.
Globe Collapsible Tube Corp., 28 Columbia Heights, Brooklyn, N. Y.
Hygienic Tube Co., 34 Ave. L., Newark, N. J. (Celluloid)
National Collapsible Tube Co., Providence, R. I.
Peerless Tube Co., Bloomfield, N. J.
Sheffield Tube Co., New London, Conn.
Sun Tube Corp., Hillside, N. J.
Victor Metal Products Corp., Brooklyn, N. Y.
White Metal Mfg. Co., 1012 Grand St., Hoboken, N. J.
A. H. Wirz, Inc., Chester, Pa.

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Hygienic Tube Co., Newark, N. J.
W. C. Ritchie & Co., 8800 S. Baltimore Ave., Chicago

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Balfour Guthrie & Co., 67 Wall St., N. Y. 5
Brown Oil & Chem. Corp., Port Richmond, Staten Island, N. Y.
W. K. Grace & Co., 7 Hanover Sq., N. Y. 5
Pacific Veg. Oil Corp., 62 Townsend St., San Francisco 7
Werner G. Smith Co., 2191 W. 110th St., Cleveland 2
Wah Chang Trading Corp., 233 Broadway, N. Y. 7
Woburn Chemical Corp., Harrison, N. J.

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Antwerp Naval Stores Co., Savannah, Ga.
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Crosby Chemicals, Inc., DeRidder, La.
Dixie Pine Prods. Co., Hattiesburg, Miss. (wood)
Georgia Rosin Prods. Co., Brunswick, Ga.
Glidden Co., P. O. Box 380, Jacksonville, Fla.
Hercules Powder Co., Wilmington, Del. (Wood)
Industrial Chem. Sales Div., 230 Park Ave., N. Y.
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Phoenix Naval Stores Co., Gulfport, Miss. (wood)
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Chemical & Process Machy. Corp., 146 Grand St., N. Y. 13
Consolidated Prods. Co., 15 Park Row, N. Y.
Emsco Equipment Co., 39 Hyatt Ave., Newark, N. J.
J. L. Ferguson Co., Joliet, Ill.
Filter Paper Co., 2464 S. Michigan Ave., Chicago
First Machy. Corp., 157 Hudson St., N. Y.
Houchin Machinery Co., Hawthorne, N. J.
Huber Machine Co., 265 46th St., Brooklyn
Jasper Machy. Co., 1123 Broadway, N. Y.
J. M. Lehmann Co., 566 New York Ave., Lyndhurst, N. J.
Machinery & Equipment Co., 533 W. Broadway, N. Y.
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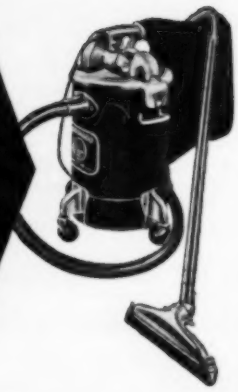

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National Super Service Co., Toledo 2, O.
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Spencer Turbine Co., Hartford 6, Conn.

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Dodge & Olcott Inc., 180 Varick St., N. Y.
P. R. Dreyer, Inc., 119 W. 19 St., N. Y. 11
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Felton Chemical Co., 603 Johnson Ave., Brooklyn
Fries Bros., 90 Reade St., N. Y.
Fritzsche Bros., 76—9th Ave., N. Y. 11
General Drug Co., 170 Varick St., N. Y.
Givaudan-Delawanna, Inc., 330 W. 42nd St., N. Y.
Maywood Chemical Co., Maywood, N. J.
Monsanto Chemical Co., 1700 S. 2nd St., St. Louis, Mo.
Verona Chemical Co., Verona Ave., Newark, N. J.

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Mipro Metal Prods. Co., 951 Howard St., San Francisco
Murdock Distributors, Inc., 9124 Sunset Blvd., Los Angeles 46
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U. S. Steel Prods. Co., 30 Rockefeller Plaza, N. Y. 20

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Consolidated Prods. Co., 15 Park Row, N. Y. (Used)
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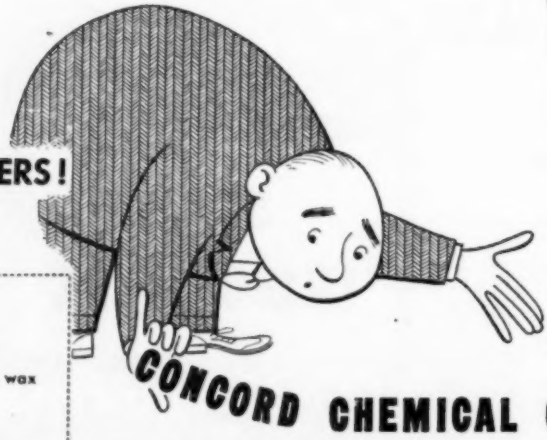

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Stein Equipment Co., 90 West St., N. Y. (Used)
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Vol-U-Meter Co., 707 Ohio St., Buffalo

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Amer. Agricultural Chem. Co., 50 Church St., N. Y.
American Cyanamid Co., 30 Rockefeller Plaza, N. Y.
Antara Prods., Div. General Dyestuff Corp., 435 Hudson St., N. Y. 14
Baum's Castorine Co., Rome, N. Y.
Bersworth Chem. Co., Framingham, Mass.
Blockson Chemical Co., Joliet, Ill.
Carlstadt Chem. Co., Carlstadt, N. J.
Chemical Mfg. & Dist. Co., Easton, Pa.
Filter Paper Co., 2464 S. Michigan Ave., Chicago
Gaylord Chem. Co., 701 Woodswether Rd., Kansas City
Jansen Soap & Chemical Co., 324 Leavenworth St., San Francisco, Calif.
Kearny Mfg. Co., Kearney, N. J.
A. R. Maas Chem Co., South Gate, Calif.
Mathieson Chemical Corp., 10 Light St., Balto. 18
Miranol Chem. Co., 16 Melville Pl., Irvington, N. J.
Monsanto Chem. Co., 1700 S. 2nd St., St. Louis
Permutit Co., 330 W. 42nd St., N. Y.
Pittsburgh Plate Glass Co., 5th & Bellefield, Pittsburgh
Port Huron Detergent Co., Port Huron, Mich.
Procter & Gamble Co., Cincinnati
Quaker Chem. Prods. Co., Conshohocken, Pa.
Refined Products Corp., Page & Newkirk Ave., Lyndhurst, N. J.
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago
Rumford Chemical Wks., Rumford 16, R. I.
E. B. Snyder Labs., 2137 E. Harold St., Philadelphia
Solvay Sales Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
Verona Chem. Co., 26 Verona, Newark, N. J.
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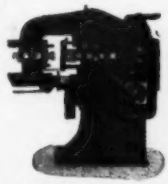
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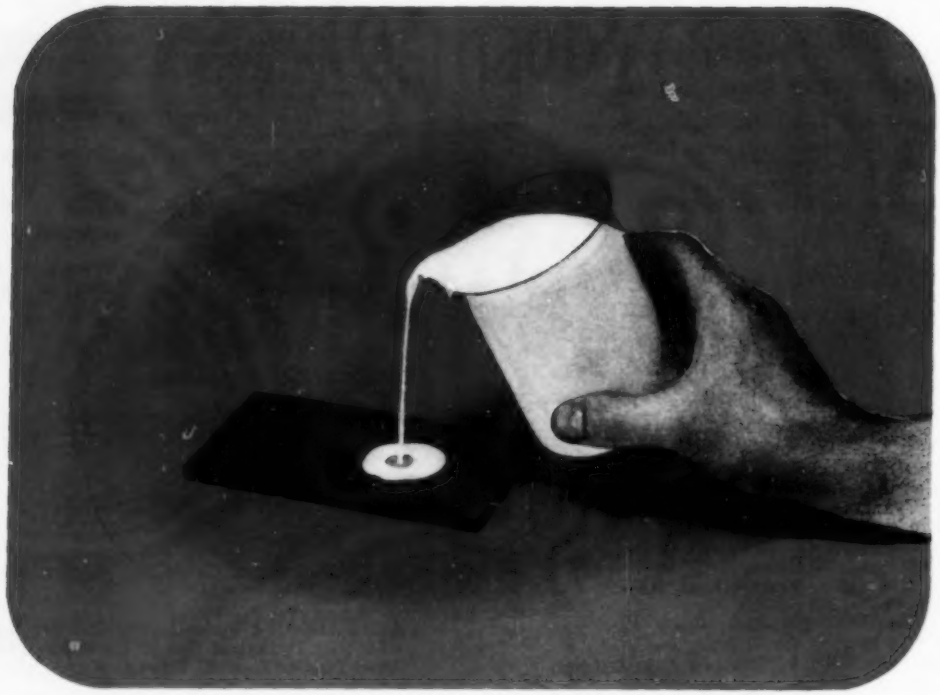

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Wm. Diehl & Co., 336 W. 42nd St., N. Y. 18
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Strohmeyer & Arpe, 139 Franklin St., N. Y.
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Wax & Rosin Prods., 42 Broadway, N. Y. 4
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Glyco Products Co., 26 Court St., Bklyn., N. Y.
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S	176/181	145/160	165/185
KP	176/181	20/30	130/145
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*Wax KPS used in No-Rub polishes.
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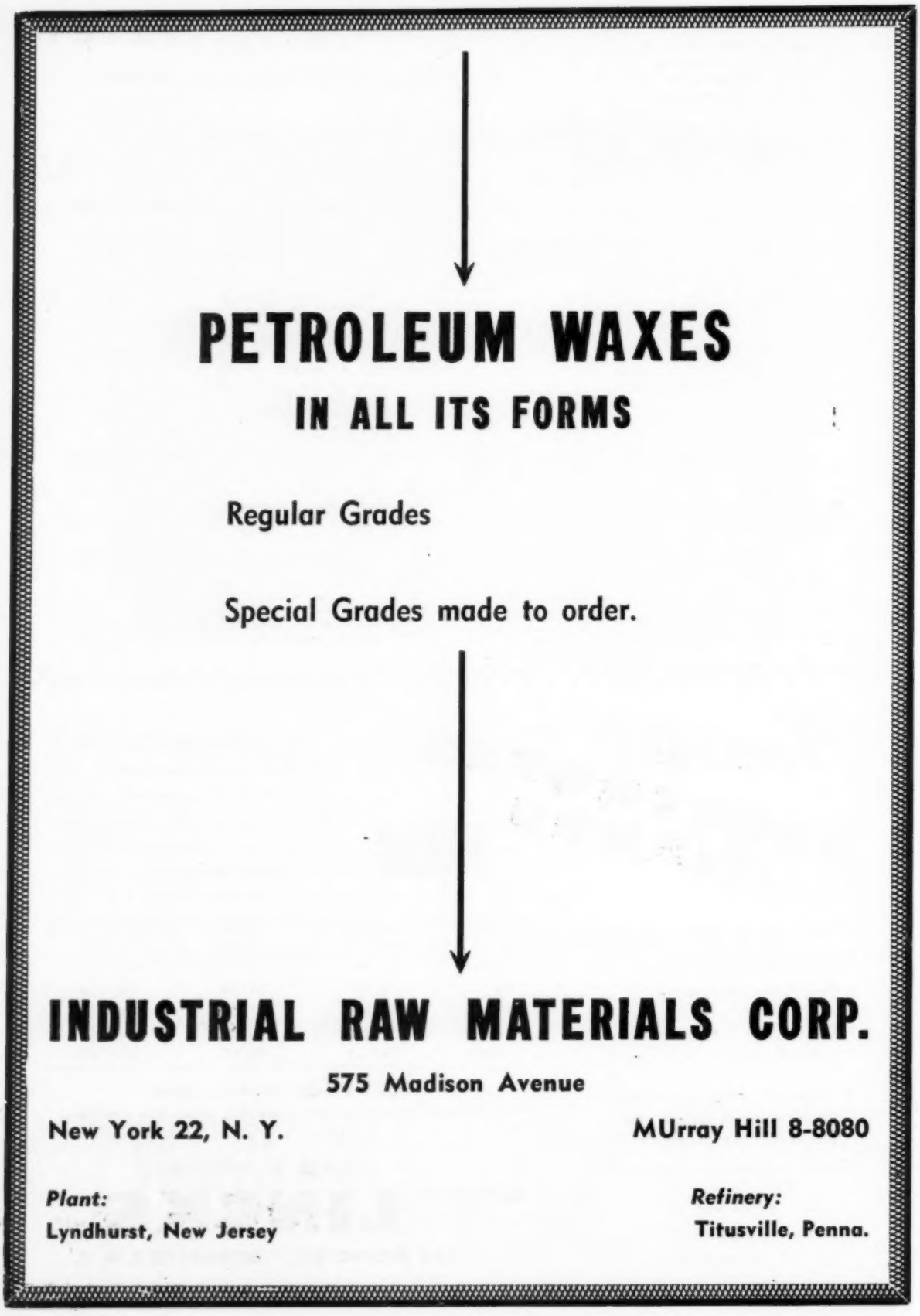
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Dow Chemical Co., Midland, Mich.
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Fuld Bros., 702 S. Wolfe St., Baltimore
Geigy Co., 89 Barclay St., N. Y. 8
General Chem. Div., Allied Chem. & Dye Corp., 40 Rector St., N. Y.
James Good Co., Susquehanna Ave. & Martha St., Phila.
Goulard & Olena, Skillman, N. J.
Heckathorn & Co., Richmond, Calif.
Innis, Speiden & Co., 117 Liberty St., N. Y. 6
Kolker Chemical Works, 80 Lister Ave., Newark 5, N. J.
Koppers Co., Pittsburgh
McLaughlin, Gormley, King Co., Minneapolis
Mathieson Chem. Corp., 10 Light St., Balto. 18
Michigan Chemical Corp. St. Louis, Mich.
Midland Laboratories, Dubuque, Iowa
Monsanto Chemical Co., 1700 S. 2nd St., St. Louis
Penn Salt Mfg. Co., Widener Bldg., Phila.
Pittsburgh Agricultural Chem. Co., 350 Fifth Ave., N. Y.
John Powell & Co., 1 Park Ave., N. Y. 1
Theo. B. Robertson Prods. Co., 700 W. Division St., Chicago 10
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200	190/195	10 max.	Brown	Nil	Nil
500	190/195	10 max.	2 to 2½	Nil	Nil
700	190/195	5 max.	2 to 2½	Nil	Nil
1035	195/200	2 max.	2 to 2½	Nil	Nil
* 23	180 min.	4 to 6	4 to 5	20-25	55-65
* 36	180 min.	5 to 7	5 to 6	30-35	75-85

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Kay-Fries Chemicals, 180 Madison Ave., N. Y. 16
Kearny Mfg. Co., Kearny, N. J.
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(see also Fish Oil Soaps)

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North Coast Chemical & Soap Works, Seattle, Wash.
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Pennsylvania Refining Co., Butler, Pa.
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Sherwood Refining Co., Englewood, N. J.
Werner G. Smith Co., 2191 W. 110th St., Cleveland
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Innis, Speiden & Co., 117 Liberty St., N. Y.
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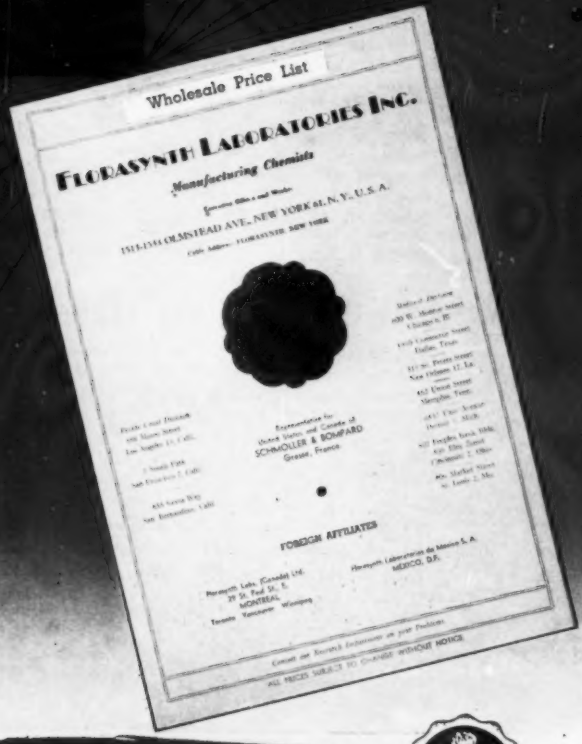

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PINE BOUQUET
ROSE

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OIL CASSIA IMITATION
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GEROSE (IMITATION GERANIUM)
ANETHOL
CITRAL
HELIOTROPIN
LAVENDENOL (IMITATION LAVENDER)
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LINALOOL
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Perfuming Material Specifications

Specifications and Standards Prepared By The Essential Oil Association for Several Important Essential Oils

BOOK OF SPECIFICATIONS & STANDARDS NOTES

Descriptive Characteristics: The statements concerning descriptive characteristics given in the individual monographs are not intended as standards or tests for purity.

Specific Gravity: Unless otherwise specified the figure $\frac{15^\circ\ C.}{15^\circ\ C.}$ is used as the basis for the specifications and standards that follow. A correction factor of .0007 must therefore be applied for each degree.

Optical Rotation: The figures given in the monographs are at room temperature approximately 20° C.

Refractive Index: The figures given are at room temperature approximately 20° C. unless otherwise specified.

Solubility: The figure given in the monographs are at 25° C. unless otherwise specified.

Mineral Oil: The mineral oil used in the solubility definition has a viscosity at 100° C. of $\frac{65}{75}$

Solvents: The solubility in fixed and volatile oils, and in such solvents as mineral oil, benzyl benzoate, glycerine and propylene glycol appearing in the monographs are listed, for the sake of uniformity, in alphabetical order.

GENERAL TESTS:

A—Determination of Esters

Place the quantity of sample mentioned in each separate monograph, in a tared, 125-cc, Erlenmeyer flask, and weigh it accurately. Add 25-cc of half-normal alcoholic potassium hydroxide, connect the flask with a reflux condenser, and boil the mixture on a water bath for exactly one (1) hour, unless otherwise specified. Allow the mixture to cool, and titrate the excess of alkali with half normal sulfuric acid, using 10 drops of phenolphthalein T.S. as the indicator. Calculate as prescribed in each individual monograph.

B—Determination of Total Alcohols

Place 10-cc of the sample in an acetylization flask of 100-cc capacity and add 10-cc of acetic anhydride and 1 Gm. of anhydrous sodium acetate. Boil the mixture gently for exactly one (1) hour, cool, disconnect the flask from the condenser, transfer the mixture to a small separator, rinsing the acetylization flask with three successive, 5-cc portions of warm distilled water, and add the rinsings to the separator. When the liquids have completely separated, reject the aqueous layer, and wash the remaining oil with successive portions of sodium carbonate T.S., diluted with an equal volume of distilled water, until the last washing is alkaline to two (2) drops of phenolphthalein T.S.

Dry the resulting oil with anhydrous sodium sulfate and filter. Transfer the quantity of the dry acetylized oil mentioned in each separate monograph, to a tared, 100-cc, Erlenmeyer flask, note its exact weight, add 25-cc of half-normal alcoholic potassium hydroxide, connect the flask with a reflux condenser, and boil the mixture on a water bath for exactly one (1) hour.

Allow the mixture to cool, and titrate the excess of alkali with half-normal sulfuric acid using 10 drops of phenolphthalein T.S. as the indicator. Calculate the per cent of the total alcohols as outlined in each individual monograph.

C—Determination of Linalool

Dimethyl Aniline—Acetyl Chloride Method

10-cc of linalool or essential oil containing linalool, previously dried with sodium sulfate, is introduced into a 125-cc g.s. Erlenmeyer flask cooled with ice and water. To the cooled oil is added 20-cc dimethyl aniline (mono-methyl free) and the contents thoroughly mixed, then 8-cc acetyl chloride (reagent grade) and 5-cc of acetic anhydride are added, the anhydride serving as a solvent to prevent crystallization of the reaction mass. The mixture is cooled for a few minutes and permitted to stand at room temperature for ½ hour after which time the flask is immersed in a water bath maintained at 40° C. ± 1° for three hours. At the end of this time the acetylated oil is washed three times with 75-cc of ice water, then with successive washes of 25-cc of 5% sulfuric acid until the separated acid layer fails to liberate any dimethyl aniline with an excess of caustic. After removal of the dimethyl aniline, the acetylated oil is washed with 10-cc of 10% sodium carbonate and washed neutral with water.

The oil is separated, dried over anhydrous sodium sulfate and the ester value determined in the usual manner. The linalool content can thus be obtained directly from saponification tables or by substitution in the following formula:

$$\%\ \text{Linalool} = \frac{\text{cc N/2 KOH} \times 154.14}{20\ (\text{wt. sample} - \text{cc N/2 KOH} \times 0.021)}$$

As this test is further to be used for other oils containing linalool, besides linalool itself, a correction factor is necessary with oils containing significant amount of esters. For such oils, the following standard formula is recommended:

$$\%\ \text{Total Linalool} = \frac{A \times 77.07 \times (1 - (E \times .0021))}{B - (A \times 0.021)}$$

where A = cc half-normal alkali required for saponification.

where B = weight of sample.

where E = per cent of esters calculated as linalyl acetate in the original oil.

The test is not applicable to all tertiary alcohols, but only to linalool and linalool containing oils.

D—Hydroxylamine Method for Aldehydes and Ketones

Preparation of Hydroxylamine solution: Triturate 0.1. Gm. of bromophenol blue with 3-cc of twentieth-normal sodium hydroxide. When solution is complete, dilute to 25-cc with distilled water. Dissolve 20 Gm. of hydroxylamine hydrochloride in 40-cc of distilled water, dilute to 400-cc with alcohol, add with stirring 300-cc of half-normal alcoholic potassium hydroxide and 2.5-cc of the bromophenol blue solution, and filter the mixture.

ASSAY METHOD: Add 75-cc of Hydroxylamine solution prepared as above to W gm. (see Note 1.) (accurately weighed of substance to be tested) and mix thoroughly.

For Aldehydes: Allow to stand at room temperature for 15 minutes.

For Ketones: Reflux gently for one hour using a water condenser or an air condenser at least 30 inches long. Cool to room temperature. (See Note 2.)

Titrate to the greenish-yellow end point of Bromophenol Blue using one-half normal hydrochloric acid. Perform a blank determination using 75-cc of the hydroxylamine solution. Subtract the num-

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ber of cc of half-normal hydrochloric acid used in the titration of the sample from the number of cc used in the blank.

$$\% \text{ Aldehyde or Ketone} = \frac{N \times .05\ M}{W}$$

where N is difference in cc of 0.5 N HCL between blank and sample obtained above.

M is molecular weight of aldehyde or ketone in terms of which results are to be calculated.

W is weight of sample used.

Note 1: The weight of sample W should be such that the cc of Hydrochloric Acid required for the titration of the flask containing the sample is slightly more than half the cc required to titrate the blank. This weight W will be given under each individual monograph, based on the use of relatively fresh hydroxylamine solution which will give a blank titration of over 30-cc of one-half normal Hydrochloric Acid. The solution has a tendency to lose strength on standing more than about 10 days.

Note 2: Some aldehydes or ketones have been found to require longer standing or heating. In such cases the change will be noted under the individual monograph.

Note 3: The value of the factor .05 M in the above formula for calculation of percentage is given under the individual monographs.

E—Determination of Acid Value

Dissolve approximately 10 gms. of the sample, accurately weighed, in 50 cc. of alcohol (previously neutralized to phenolphthalein with N/10 sodium hydroxide). Add 1 cc. of a 1% alcoholic phenolphthalein solution and titrate with N/10 sodium hydroxide until the solution remains faintly pink after 30 seconds of shaking. The cc of N/10 alkali required to neutralize the sample multiplied by 5.6 and divided by the weight of sample expressed in grams, indicates the Acid Value of the sample taken.

F—Determination of Evaporation Residue

Place the quantity of sample specified in the individual monograph in a tarred 100 cc. glass evaporating dish, previously heated on a steam bath and cooled to room temperature in a desiccator and weigh it accurately. Heat the evaporating dish containing the oil on a steam bath for the length of time specified in the individual monograph. Allow the dish and contents to cool to room temperature in a desiccator and weigh accurately. Determine the weight of the residue and express as a percentage of the oil originally taken.

G—Determination of Chlorinated Compounds

At the end of a copper wire bend a strip of 20 mesh copper gauze 1.5 cm. wide and 5 cm. long. Place the strip in the non-luminous flame of the Bunsen Burner until it glows without imparting a green color. Cool the gauze and repeatedly ignite it until an oxide coating has formed. To apply the test, cool the gauze and add 2 drops of the sample by means of a medicine dropper, permitting it to burn in the air. Again cool and add 2 more drops of the test material and burn as before. Continue the procedure until six drops have been ignited. When completed, if the gauze is held in the outer edge of the burner to a height of about 4 cm., the flame should be free of even a transient green color.

H—DETERMINATION of: Congealing Point

A Pyrex test tube approximately 18-20 mm. internal diameter is filled ⅓ full with the liquid or melted solid under test. The tube and its contents are immersed in a suitable bath until the temperature of the sample is super-cooled to approximately 5°C. below the expected congealing point. The tube and its contents are then suspended inside of a test tube 25-30 mm. internal diameter which has been fitted with a cork ring or washer to receive the smaller tube. The jacketed tube is placed in a bath maintained at 5°C. below the congealing point. The proper range MCA thermometer is inserted in the liquid and the liquid stirred to produce solidification. If needed, solidification can be induced by seeding. The stirring is continued until the determination has been completed. The temperature of the test material should be observed constantly. The maximum constant temperature obtained is the congealing point.

I—Determination of: Aldehydes (Hydroxylamine Hydrochloride Method)

BROM PHENOL BLUE INDICATOR solution:— Triturate 0.1 gm. of brom-phenol blue with 3 ml. of N/20 sodium hydroxide. When solution is complete, dilute to 25 ml. with distilled water.

Preparation of Hydroxylamine Hydrochloride solution:—Dissolve 150 gms. of hydroxylamine hydrochloride (C.P. or freshly recrystallized) in 270 ml. of distilled water and dilute to 3 liters with aldehyde—free ethyl alcohol. To this solution add 15 ml. of the above brom-phenol blue solution. The hydroxylamine hydrochloride solution is then adjusted to a pH of 3.4 (light green color), (Note 1) with N/2 alcoholic potassium hydroxide.

ASSAY METHOD:—To 30 ml. of hydroxylamine hydrochloride solution contained in a corked 150 ml. Erlenmeyer flask, add an accurately weighed sample of the material to be tested. The solution is thoroughly mixed and allowed to stand at room temperature for 10 min. The liberated hydrochloric acid is titrated with N/2 alcoholic potassium hydroxide to a pH of 3.4 or a light green color, using a 30 ml. portion of the original reagent as a color standard. Note 2.

$$\% \text{ Aldehyde} = \frac{N \times 0.005\ M}{W}$$ where N is the number of ml. of N/2 potassium hydroxide used in the titration and M is the molecular weight of the aldehyde in terms of which the results are to be calculated. W is the weight in grams of the sample used.

Note 1: Reagent must be viewed in small portions (30 ml.) as large volumes seem to have a reddish color.

Note 2: When viewing the end point the precipitated salts should be allowed to settle.

J—Determination of: Aldehydes and Ketones (Neutral Sulphite Method)

Place 10-cc of the oil to be tested, measured from a pipette in a 100-cc cassia flask, and add 50-cc of a freshly prepared aqueous solution of sodium sulphite, 30 per cent by weight volume. Add a few drops of a one per cent solution of phenolphthalein and neutralize with a 50 per cent (by-volume) aqueous acetic acid solution. Heat the mixture in a bath containing boiling water, and shake the flask repeatedly neutralizing the mixture from time to time by the addition of a few drops of the 50 per cent acetic acid solution, using a stoppered flask to prevent loss of volatile material. When no coloration appears upon the addition of a few more drops of phenolphthalein solution and heating for 15 minutes, cool to room temperature, and when the liquids have separated completely, add sufficient of the sodium sulphite solution to raise the lower limit of the oily layer within the graduated portion of the neck. The number of cc of separated oil in the graduated neck is multiplied by ten and subtracted from 100, the resulting figure represents the per cent by volume of the aldehyde or ketone in the sample being examined.

K—Determination of: Phenols

Introduce 10-cc of oil into a 100-cc Cassia flask. Add 75-cc of 1.0 Normal potassium hydroxide and shake vigorously for 5 minutes to insure thorough extraction of the phenol by the alkali solution. Allow to stand for about one half hour, then add sufficient potassium hydroxide solution to raise the oily layer within the graduated portion of the flask. Allow the stoppered flask to stand several hours or preferably over night. The volume of insoluble oil in cubic centimeters is subtracted from 10. This difference multiplied by 10 gives the percentage of phenol by volume in the oil.

L—Determination of: Heavy Metals

Place in a test tube 10-cc of the oil and add an equal volume of distilled water to which 1 drop of concentrated hydrochloric acid has been added. Shake thoroughly and then pass hydrogen sulfide through the mixture until it is saturated. Carry out simultaneously a blank determination to which no hydrogen sulfide is added. In the absence of heavy metals, no darkening in

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color in either the oil or the water layer is produced. A comparison of the colors of the blank and of the determination will aid in establishing the absence of heavy metals, or the presence of traces. The formation of a scum at the surface between the oil and the water layers is no indication of the presence of heavy metals, unless the scum is dark in color.

General Tests—Reagents
I—Purification of Alcohol

Add to each liter of alcohol to be purified about 5 gm. of aluminum shavings and 8 to 10 gm. of potassium hydroxide; reflux on a steam bath for about 3 hours.

Then distill off the alcohol to dryness on the steam bath, discarding the first 10 ml. that comes over. This alcohol is used in the preparation of hydroxylamine hydrochoride and alcoholic caustic solutions.

Specifications and Standards For ETHYL PHENYL ACETATE

$C_{10}H_{12}O_2$ Mol. Wt. 164.20

The ethyl ester of phenylacetic acid has not been found to occur naturally in volatile oils. The free acid and other esters of phenylacetic acid have been found in a limited number of essential oils.

As a general rule, the simple esters of phenylacetic acid have pronounced honey-like odors and are used for both flavor and odor effects. The free acid and lower esters are also used extensively for syntheses in the pharmaceutical industry.

Preparation

By ethanolic esterification of the corresponding acid or nitrile.

Physical & Chemical Constants

Color, Appearance and Odor: Colorless or nearly colorless liquid having a pleasant, strong sweet odor suggestive of honey.

Specific Gravity at 25°/25°C.: 1.027—1.032.

Refractive Index at 20°C.: 1.4960—1.5000.

Halogens: Negative. Proceed as directed for the determination of chlorinated compounds. (See G)

Acid Value: Maximum 1.

Proceed as directed for the determination of acid value. (See E)

Purity: Minimum 98% as $C_{10}H_{12}O_2$.

Proceed as directed for the determination of esters using approximately 1.0 gm. sample accurately weighed. (See A)

The number of cc. of half-normal potassium hydroxide solution consumed in the saponification, multiplied by 0.08210, indicates the number of grams of ester calculated as Ethyl Phenyl Acetate in the sample taken for assay.

Solubility in Alcohol: Soluble in 3 parts of 70% alcohol.

Descriptive Characteristics

Solubility:

Diethyl Phthalate: Soluble in all proportions.

Benzyl Benzoate: Soluble in all proportions.

Mineral Oil: Insoluble.

Fixed Oils: Soluble in all proportions in most fixed and volatile oils.

Alcohol: Soluble in all proportions.

Propylene Glycol: Insoluble.

Water: Insoluble.

Glycerine: Insoluble.

Stability:

Alkali: Unstable in the presence of strong alkalies.

Acid: Moderately stable to organic acids and dilute mineral acids.

Containers

Can be shipped in glass, aluminum, tin-lined or steel containers. Good quality galvanized or suitable lacquer lined drums are also satisfactory provided long storage is not contemplated.

Storage

Store preferably in a cool dry place protected from light.

Specifications and Standards For ANISIC ALDEHYDE

$C_8H_8O_2$ Mol. Wt. 136.14

p-methoxy benzaldehyde, anisaldehyde, aubepine.

Anisic Aldehyde is found in acacia flowers, Tahiti vanilla extract and in minute amounts in other oils. Anisic Aldehyde is used in general perfume work and especially in the scenting of soaps.

Preparation

By methylation and oxidation of para cresol and also by oxidation of anethole.

Physical & Chemical Constants

Color and Appearance: Colorless to slightly yellow liquid with characteristic hawthorn odor.

Specific Gravity at 25°/25°C.: 1.199—1.122.

Refractive Index at 20°C.: 1.5710—1.5730.

Chlorine: Negative. Proceed as directed for the determination of Chlorinated Compounds. (See G)

Acid Value: Maximum 6.

Method: Proceed as directed for the determination of acid value. (See E)

Purity: Not less than 97.5% by hydroxylamine method and not less than 99% by bisulfite method.

Assays: Aldehyde determinations:

(1) Proceed as directed for the hydroxylamine method for Aldehydes (see D) using approximately 1.2 gms. of sample, accurately weighed. Allow sample and blank to stand at room temperature for 15 minutes.

The difference in the cc. of N/2 HCl required for both titrations multiplied by 0.06807, indicates the weight in grams of anisic aldehyde in the sample taken for assay.

(2) Place 40 cc. of 30% sodium bisulfite solution in a 200 cc. cassia flask and add to this approximately 100 cc. of boiling water. Immediately pipette 10 cc. of the sample into the flask, stopper securely and shake vigorously for 1½ minutes.

Then add sufficient boiling water to fill the flask to the top of the graduations in the neck of the flask. Allow to cool and read off the oil volume in the neck of the flask. Ten times this volume in cc's subtracted from 100 gives the per cent anisic aldehyde present in the sample.

Solubility in Alcohol: Soluble in 7 vol. of 50% Alcohol.

Descriptive Characteristics

Solubility:

Alcohol: Soluble in all proportions.

Benzyl Benzoate: Soluble in all proportions.

Diethyl Phthalate: Soluble in all proportions.

Fixed Oils: Soluble in all proportions.

Glycerine: Practically insoluble.

Mineral Oil: Practically insoluble.

Propylene Glycol: Moderately soluble.

Stability: Fairly stable to acids and mild alkalies.

Containers

Should be shipped preferably in glass or tin-lined containers.

Storage

Store in a cool place, protected from light in tight, full containers to minimize oxidation.

Specifications and Standards For OIL LEMONGRASS

There are basically two types of Lemongrass Oil commercially available: the East Indian and "West Indian" type oil.

The East Indian Oil is also known as Cochin, Native and British Indian Lemongrass Oil.

The "West Indian" type oil appears on the market designated according to geographic origin as Madagascar, Guatemala, Honduras or Florida Lemongrass Oil, etc.

Botanical Nomenclature:

East Indian Oil: Cymbopogon flexuosus (Stapf). Andropogon nardus var. flexuosus (Hack.).

"West Indian" type Oil: Cymbopogon citratus (Stapf). Andropogon nardus var. ceriferus (Hack.).

Preparation:

By steam distillation of the freshly cut and partially dried grasses.

Physical & Chemical Constants: East Indian Oil:

Color and Appearance: The East Indian Oil is generally dark yellow to light brown-red in color and has a pronounced heavy lemon-like odor.

Specific Gravity 15°/15° C. 0.900-0.910.

Optical Rotation —3° to +1°.

Refractive Index @ 20° C. 1.4830-1.4890.

Citral Content:

A. Acid Sulfite Method—Not less than 75%.

Solubility—Solubility in 2 to 3 volumes of 70% alcohol, often with slight turbidity.

"West Indian" Type Oil:

Color and Appearance: The "West Indian" type Oil varies from light yellow

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Oil Orange
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Oil Petitgrain
Oil Rosemary
Oil Sassafras
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Oil Thyme—Red
Oil Thyme—White
Oil Wormseed

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AROMATICS

CHICAGO PHILADELPHIA BOSTON MEMPHIS, TENN.

to light brown or orange. Its odor is lemon-like but of lighter character than the East Indian.

Specific Gravity 15°/15° C. 0.875-0.900.

Optical Rotation —3° to +1°.

Refractive Index @ 20° C. 1.4830-1.4890.

Citral Content:

A. Acid Method—Not less than 75%.

Solubility—Yields cloudy solutions in 70, 80, 90 and 95% alcohol.

Assay

A. Acid Sulfite Method: Introduce 10cc of Lemongrass Oil into a 100cc. Cassia flask and add 75cc. of a 30% solution of sodium metabisulfite. Heat the mixture in a water bath to 85° and shake the flask intermittently for one-half to one hour. Then add sufficient bisulfite solution to raise the meniscus within the graduated portion of the flask. On cooling, the volume of insoluble oil expressed in per cent subtracted from 100 represents the citral content.

Descriptive Characteristics

Stability:

Alkali: Lemongrass oils slowly decompose in the presence of alkalis.

Acids: Strong inorganic acids tend to polymerize the oil. Weak organic acids have less effect.

Solubility:

Propylene Glycol: The East Indian oil is soluble in all proportions of propylene glycol with slight turbidity or cloudiness.

The "West Indian" type oil has limited solubility in propylene glycol (about 10% accompanied by cloudiness).

Mineral Oil: Soluble with cloudiness or turbidity.

Fixed Oils: Soluble in most fixed oils.

Benzyl Benzoate: Soluble in all proportions, generally with slight turbidity.

Diethyl Phthalate: Soluble in all proportions with slight turbidity.

Glycerin: Slightly soluble.

Containers

Should be shipped preferably in glass, aluminum or tin-lined containers. Good quality galvanized containers are suitable, provided long storage is not contemplated.

Storage

Store in full containers and avoid exposure to light and excessive heat.

Specifications and Standards for VETIVER OIL

General Names

The oil of commerce is characterized by its geographical origin.

Vetiver Oil Java—Vetiver Oil Reunion (Bourbon)—Vetiver Oil Haiti.

Botanical Nomenclature

Vetiveria Zizanioides Stapf.

Andropogon Muricatus Retz.

Preparation

By steam distillation of partially dried roots.

Physical and Chemical Constants

Odor: Aromatic—somewhat woody.

Color and Appearance: Brownish to a reddish-brown viscous liquid.

Specific Gravity @ 15° C: 0.990 to 1.040.

Optical Rotation: + 15° to + 45°.

Refractive Index @ 20° C: 1.5200 to 1.5280.

Solubility:

Soluble in 1 to 3 vols. of 80% alcohol, sometimes opalescent or slightly turbid upon further dilution.

Descriptive Characteristics

Stability:

Acids: Fairly stable to dilute acids but unstable in the presence of strong acids.

Alkali: Fairly stable to weak alkali. Unstable to strong alkali.

Solubility:

Fixed Oils: Soluble in all proportions in most fixed oils.

Diethyl Phthalate: Soluble in all proportions.

Benzyl Benzoate: Soluble in all proportions.

Mineral Oil: Soluble with slight cloudiness.

Glycerin: Insoluble.

Propylene Glycol: Practically insoluble.

Saponification Value:

See Directions (see G.T.A.) using 5 grams of oil, accurately weighed. The number of cc of N/2 alkali consumed in the saponification multiplied by 28.05 and divided by the weight of sample taken equals Saponification Value.

Ester Value After Acetylation:

110 to 165.

See Directions (see G.T.A.) using 2 grams of acetylized oil accurately weighed for saponification. The number of cc of N/2 alkali consumed in the saponification multiplied by 28.05 and divided by the weight of sample taken equals Ester Value after Acetylation.

Containers

Should be shipped preferably in glass or tin-lined containers. Good quality galvanized containers are suitable when long storage is not contemplated.

Storage

Store preferably in tight, full containers in a cool place, protected from light.

Specifications and Standards for OIL OF PATCHOULY

Botanical Nomenclature

Pogostemon Patchouly, Pellet.

Preparation

Direct steam distillation of the dried leaves.

Physical and Chemical Constants

Color and Appearance—a yellow-greenish brown, or brown liquid.

Specific gravity @ 15° C: .950 to .995.

Optical Rotation: —48° to —68°.

Refractive Index a 20° C: 1.5070 to 1.5200.

Solubility—Soluble in 10 vol. of 90% alcohol, usually with opalescence.

Acid Value—not more than 5.

Proceed as directed for the determination of acid value.

(See Determination G.T.E.)

Saponification No.—Not more than 18.

Proceed as directed for the determination of esters. (See Determination G.T.A.) using 5 grams of the oil accurately weighed.

Descriptive Characteristics

Stability:

Stable to weak alkalis and acids.

Solubility:

Benzyl Benzoate: Soluble.

Fixed Oils: Soluble in all proportions in most fixed oils.

Glycerin: Practically insoluble.

Mineral Oil: Soluble with haziness.

Propylene Glycol: Partially soluble.

Containers

Should be shipped preferably in glass or tin-lined containers. Good quality galvanized containers are suitable provided long storage is not contemplated.

Storage

Store in tight, full containers in a cool place, protected from light.

Specifications and Standards for PHENYL ETHYL ALCOHOL

$C_8H_{10}O$ Mol. Wt. 122.16

Preparation

Phenyl Ethyl Alcohol can be prepared from Benzene, Ethylene Oxide, Aluminum Chloride and Hydrochloric Acid; also, from Phenyl Magnesium Bromide and Ethylene Chlorohydrin or from Chlorobenzene, Magnesium and Ethylene Chlorohydrin or Ethylene Oxide.

Physical and Chemical Constants

Color, Appearance and Odor—Colorless, viscous liquid with a rose odor.

Specific Gravity @ 25° C. 1.017 to 1.020.

Refractive Index @ 20° C. 1.5310 to 1.5330.

Halogens—Negative. Proceed as directed for the determination of Chlorinated Compounds (See Determinations G.T.G.).

Water Solubility—2.0 cc. should be clearly soluble in 100 cc. of distilled water at 25° C. after thorough shaking.

Descriptive Characteristics

A satisfactory quality of Phenyl Ethyl Alcohol should not reveal any chemical off-odor when two cc. are stirred up in 20 cc. of ice cold odorless water.

Solubility:

Benzyl Benzoate: Very soluble.

Diethyl Phthalate: Very soluble.

Fixed Oils: Very soluble.

Alcohol: Very soluble.

Mineral Oil: Slightly soluble.

Propylene Glycol: Very soluble.

Glycerin: Very soluble.

Water: Sparingly soluble.

Stability:

Acids and Alkalis: Very stable in closed containers. Quite stable with mild alkali or acid at ordinary temperatures and conditions as encountered in the preparation and storage of cosmetics and soaps.

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Containers

Should be shipped in tin-lined or galvanized drums or in glass.

Storage

Should be stored in tight containers reasonably well protected against direct light.

Specifications and Standards for TERPINYL ACETATE

$C_{10}H_{17}.O_2C_2H_3$ Mol. Wt.: 196.28

Preparation

Acetylation of terpineol.

Physical & Chemical Constants

Color and appearance: Colorless liquid having an odor suggestive of bergamot and lavender.

Specific gravity at 15° C.: 0.958 to 0.968.

Optical rotation: between —0°30′ and +0°30′.

Refractive index @ 20° C.: 1.4640 to 1.4660.

Ester Content: 97-100% (calculated as terpinyl acetate).

Method: Proceed as directed for the determination of esters, (see A), using approximately 1.0 g of sample accurately weighed. Reflux the mixture on a water bath for exactly two hours. The number of cc. of half normal potassium hydroxide consumed in the saponification, multiplied by 0.0981 indicates the number of grams of ester calculated as Terpinyl Acetate in the sample taken for assay.

Solubility in alcohol: Soluble in 5 or more volumes of 70% alcohol.

Descriptive Characteristics

Solubility:

Fixed Oils: soluble in all proportions.

Diethyl Phthalate: soluble in all proportions.

Benzyl Benzoate: soluble in all proportions.

Mineral Oil: soluble in all proportions.

Water: slightly soluble, approx. 0.1%.

Glycerin: slightly soluble, approx. 0.1%.

Stability:

Acids: Not very stable; strong acids transform terpinyl acetate into terpenic products.

Alkali: Stable in neutral and weak alkaline media; strong alkalis saponify the ester.

Oxidation: Stable.

Containers

Terpinyl acetate should be shipped in glass, tin, aluminum, galvanized iron.

Specifications and Standards for TERPINEOL

$C_{10}H_{18}O$ Mol. Wt.: 154.24

Formula: Mixture of Isomers

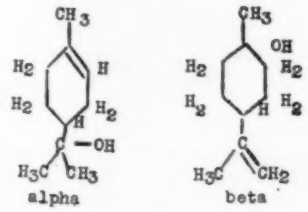
Preparation

Obtained from terpin hydrate by splitting off the elements of water by chemical means.

Physical & Chemical Constants

Color and appearance: Colorless liquid, viscous at room temperature, having an odor of the lilac type.

Specific gravity @ 15° C: 0.936 to 0.941.



Optical rotation: between —0°10′ and +0°10′.

Congealing temperature: all products should crystallize when seeded at +2° C.

Boiling range: 214°-224° C.; 90% within 5° C.

Refractive index @ 20° C.: 1.4825-1.4850.

Solubility in alcohol: soluble in 2 and more volumes of 70% alcohol; 4 and more volumes of 60% alcohol, 8 and more volumes of 50% alcohol.

Descriptive Characteristics

Solubility:

Diethyl Phthalate: soluble in all proportions.

Benzyl Benzoate: soluble in all proportions.

Mineral Oil: soluble in all proportions.

Water: slightly soluble; approx. 0.5%.

Water in Terpineol: slightly soluble; approx. 5%.

Glycerin: slightly soluble; approx. 0.5%.

Stability:

Acids: not stable; terpineol transformed into terpenic products.

Alkali: stable in neutral and moderately alkaline media.

Oxidation: relatively stable.

Containers

Terpineol should preferably be shipped in glass, tin, aluminum, galvanized iron, clean black iron.

Specifications and Standards for HELIOTROPINE

$C_8H_6O_2$ Mol. Wt.: 150.13

Heliotropine, piperonal, piperonyl aldehyde, protocatechuic aldehyde methylene ether, 3-4 methylene dioxybenzaldehyde.

Grades: Perfumery grade.

Preparation

Oxidation of isosafrol.

Uses: Heliotropine is widely used in soap perfumery. Aids in the making of carnation, violet, lilac, sweet pea and muguet types. An indispensable base for all heliotrope perfumes and bouquets.

Physical & Chemical Constants

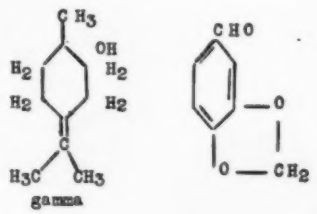
Color and appearance: Fine, white, lustrous crystals.

Odor: A sweet, fine, flowery note resembling heliotrope, free of safrol byodors.

Congealing Point 35.° C. minimum.

Melting Point: 35.5°-37° C.

Aldehyde content: 99.0% minimum calculated as Heliotropine.



Assay

Heliotropine Determinations

Proceed as directed in D, using approximately 1.5 gram sample, accurately weighed. Reflux gently for one-half hour. The difference in the cc. of N/2 HCl required for both titrations multiplied by 0.0751 indicates the weight in grams of Heliotropine taken for assay.

Descriptive Characteristics

Stability

When stored at temperatures approximating its melting point, the product tends to fuse and discolor.

Acids: Stable to dilute acids at ordinary temperatures.

Alkali: Stable to dilute alkali at ordinary temperatures.

Oxidation: Relatively resistant to oxidations; oxidizes very slowly to piperonylic acid.

Solubility

Alcohol: soluble in 3 to 4 cc. of 70% alcohol.

Benzyl Benzoate: V.S.

Diethyl Phthalate: V.S.

Fixed Oils: F.S. in most fixed oils.

Glycerin: Insol. (less than 1 part per 100).

Mineral Oil (Carnation white): Sp. Sol.

Propylene Glycol: F.S.

Volatile Oils: F.S. to S. in most volatile oils.

Water: Insol. (less than 1 part per 100).

The figures given are at 25° C. unless otherwise noted. Relative cc. of solvent for 1 gram of Heliotropine.

Very soluble (V.S.): less than 1 cc. of solvent.

Free soluble (F.S.): from 1 to 10 parts of solvent.

Soluble (S): from 10 to 30 parts of solvent.

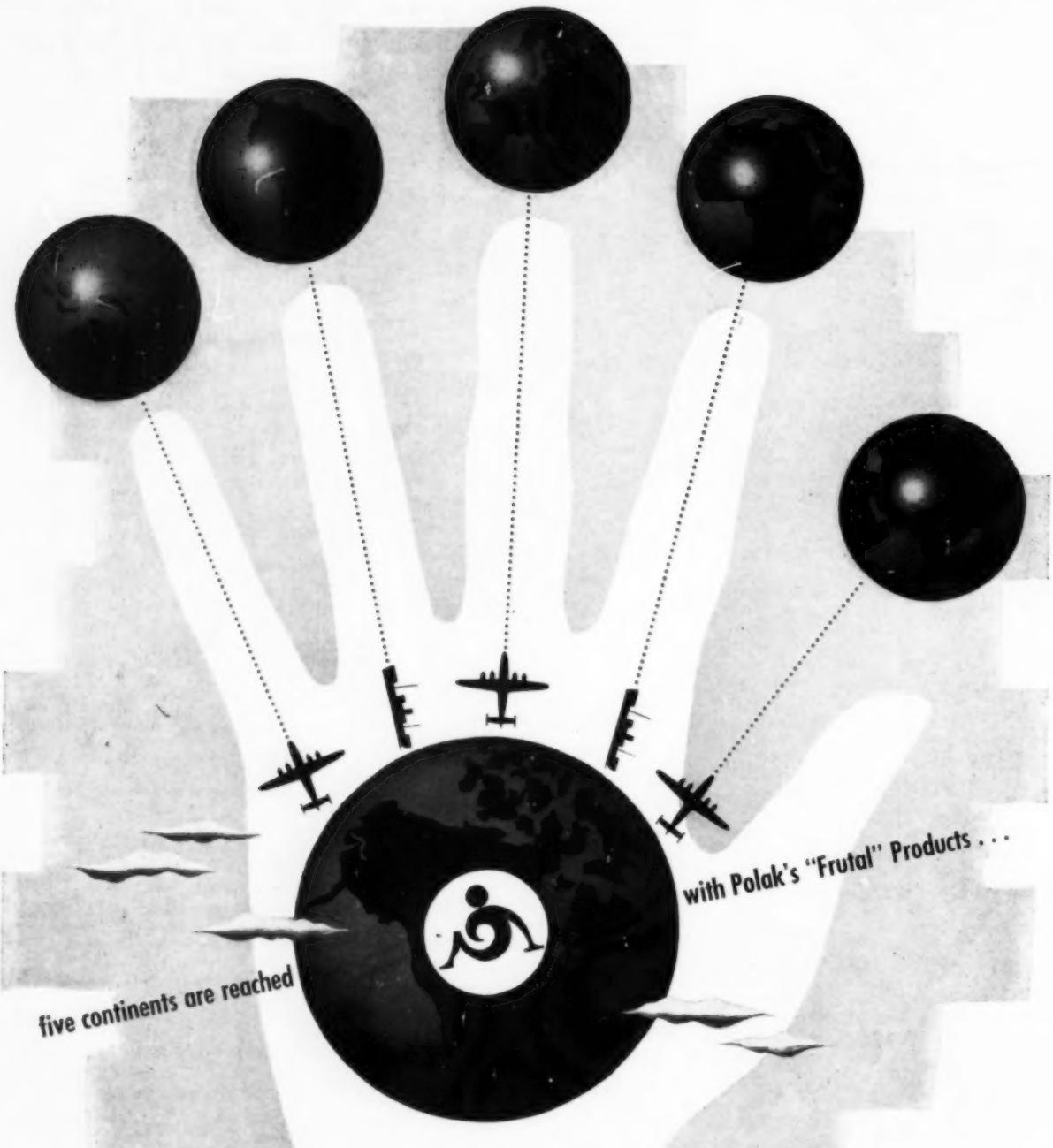
Sparingly soluble (Sp. Sol.) from 30 to 100 parts of solvent.

Containers

1 oz. to 200 lbs., usually packed in fibreboard or pressboard containers and wooden barrels.

Storage

Preserve Heliotropine in a cool, dry place protected from light.



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Specifications and Standards for Copaiba Oil

Other General Names

Copaiva oil.
Copaiva Balsam oil.

Preparation

Obtained by distillation of Copaiba Balsam.

Physical and Chemical Constants

The oil is colorless, yellowish liquid having the characteristic odor of Balsam Copaiba and an aromatic, slightly bitter and pungent taste.

Specific Gravity @ 15° C.: 0.886 to 0.912.

Optical Rotation: —2° to —33°.

Refractive Index @ 20° C.: 1.4930 to 1.5000.

Gurjun Oil Test:

Add 5 to 6 drops of sample to 10 cc glacial acetic acid containing 5 drops of nitric acid. When gurjun oil is present a purple violet color develops within two (2) minutes.

Descriptive Characteristics

Stability:

Alkali: Fairly stable.
Acid: Fairly stable.

Solubility:

Benzyl Benzoate: Soluble in all proportions.

Mineral Oil: Soluble in all proportions.

Fixed Oils: Soluble in all proportions.

Diethyl Phthalate: Soluble in all proportions.

Propylene Glycol: Practically insoluble.

Glycerine: Insoluble.

Alcohol: Usually soluble in an equal volume of absolute alcohol, but requires from 5 to 10 volumes of 95% alcohol for complete solution.

Containers

Should be shipped preferably in glass, tin-lined or aluminum containers. Good quality galvanized containers are suitable when long storage is not contemplated.

Storage

Store preferably in tight, full containers in a cool place protected from light.

Specifications and Standards for Oil Citronella Ceylon

Botanical Nomenclature

Andropogon Nardus Ceylon, de Jong.
Cymbopogon Nardus Rendle, lena batu.
Family: Gramineae.

Preparation

Direct steam distillation of the dried grass.

Physical and Chemical Constants

Color and appearance—Yellow to yellowish brown liquid.

Specific Gravity @ 15° C.: —0.898 to 0.910.

Optical Rotation: —9° to —18°.

Refractive Index @ 20° C.: —1.4790 to 1.4850.

Solubility in Alcohol—Clearly soluble at some dilution between 1 and 2 volumes of 80% alcohol. When diluted to 10 volumes, the solution should remain clear or become not more than slightly opalescent with no separation of oil after standing overnight.

Mineral Oil (saturated hydrocarbons) —Negative.

Place 20 cc of fuming sulphuric acid, containing 15% free SO_3 in a graduated, narrow neck Babcock bottle, 50 cc capacity, cool in ice bath 10 minutes, keep bottle in ice bath and add 5 cc of Oil Citronella Ceylon dropwise at such a rate that the bottle remains cold. Incline the bottle and rotate continuously during the addition, which should require about 5 minutes. When no further reaction is apparent remove from ice bath, bringing slowly to room temperature with frequent cautious shaking. Wash down neck with 3 or 4 cc of fuming sulphuric acid.

When no further reaction is apparent on shaking, shake vigorously for 30 seconds. Place bottle in water bath and heat slowly to 60° C. with frequent agitation. (Caution is required, as escaping gas may force some solution from bottle.) Heat at 60°-65° C. for 15 minutes, shaking the contents carefully but vigorously 8-10 times during this period. Remove from bath and without cooling, carefully add sulphuric acid (Specific gravity about 1.84) until the bottle is about three-fourths full. Shake well. No material should adhere to stem and sides at this point; cool to room temperature, add sulphuric acid (Specific gravity about 1.84) until the level is about two-thirds up in neck of flask. Centrifuge 10 minutes at 1,200 revolutions per minute or stand over night and read, centrifuge an additional 10 minutes. Pure Oil Citronella Ceylon should have no readable separation.

Aldehyde Content

7% to 15% calculated as Citronellal.

Proceed as directed in the hydroxylamine method for alhehydes (see Determinations (G.T.D), using approximately 5 grams of the oil, accurately weighed. The difference in the cc of N/2 HCL required for both titrations, multiplied by 0.07712, indicates the weight in grams of Citronellal in the sample taken for assay.

Total Alcohols

55% to 65% (calculated as Geraniol).

Proceed as directed for the determination of total alcohols (see Determinations G.T.B). Observe the following modifications: 1. Use two (2) grams of anhydrous sodium acetate; 2. Immerse the acetylization flask in an oil bath to the level of the liquid in the flask; continue the acetylization for two (2) hours, keeping the bath between 155°-160° C.

Use approximately two (2) grams of the dried acetylized oil, accurately weighed, for the subsequent saponification. Calculate the per cent of Geraniol by the following formula:

Per cent of total alcohols, calculated as Geraniol, in the oil tested =

$$\frac{A \times 7.712}{B - (A \times 0.021)}$$

A is the result obtained by subtracting the number of cc of half normal hydrochloric acid required in the titration from the number of cc of half normal alcoholic potassium hydroxide originally taken. B is the weight of acetylized oil taken.

Descriptive Characteristics

Stability:

Alkali: Relatively unstable in the presence of alkali.

Acids: Unstable, esterification takes place in the presence of some organic acids. Many strong inorganic acids cause decomposition.

Solubility:

Benzyl Benzoate: Soluble in all proportions.

Fixed Oil: Soluble in all proportions in most fixed oils.

Glycerine: Practically insoluble.

Mineral Oil: Usually forms cloudy solutions.

Propylene Glycol: Soluble usually with opalescence or turbidity.

Containers

Should be shipped preferably in glass, tin-lined or aluminum containers. Good quality galvanized or clean black iron containers are suitable when long storage is not contemplated.

Storage

Store preferably in tight, full containers in a cool place protected from light.

Specifications and Standards for Citronella Oil—Java Type

Other General Names

The oil of commerce is generally characterized by the geographic origin, e.g., Java, Guatemala, Formosa, etc., and differs from the Ceylon oil in both composition and odor.

Botanical Nomenclature

Andropogon Nardus (L), Cymbopogon Nardus (Rendle).

Family: Gramineæ.

The grass used for production of the Java type oil is referred to as the "maha pengri" type, as distinguished from the "lena batu," which is used for the production of the Ceylon type oil.

Preparation

By direct steam distillation of the freshly cut or partially dried grasses.

Physical and Chemical Constants

Color and appearance—The Java type Citronella Oil is characterized by a light yellow to tan color, low viscosity, and pronounced aldehydic odor.

Specific Gravity 15°/15° C.: 0.883 to 0.900.

Optical Rotation: —0° 30′ to —6°.

Refractive Index @ 20° C.: 1.4660 to 1.4745.

Total Aldehydes as Citronellal: 30% to 45%.

The aldehyde content of individual drums may show a wide variation; however, bulk shipments are generally required to meet an average minimum citronellal content of 35%.

Total Alcohols as Geraniol: 85% to 97%.

Solubility:

Clearly soluble at all dilutions between 1 and 2 volumes of 80% alcohol and may become opalescent on further dilution.

Assay:

Total Aldehydes as Citronellal:

Proceed as directed in the hydroxylamine method for aldehydes (see Determinations G.T. D), using approximately 2.5 grams of sample, accurately weighed. The difference in the cc of N/2 HCl required for both titrations multiplied by 0.07712 indicates the weight in grams of total aldeyhdes calculated as citronellal in the sample taken.

Assay:

Total Alcohols as Geraniol:

Proceed as directed for the determination of total alcohols (see Determination G.T. B), with the following modifications:

1. Use 2 grams of anhydrous sodium acetate for acetylation.
2. Reflux the resulting acetylation mixture for two hours.

Calculate the percentage of total alcohols as geraniol, employing the following formula:

$$\% \text{ Total Alcohols} = \frac{A \times 7.712}{B - (A \times 0.021)}$$

A is the result obtained by subtracting the number of cc of half normal hydrochloric acid required in the titration from the number of cc of half normal alcoholic potassium hydroxide originally taken.

B is the weight of acetylized oil taken.

Descriptive Characteristics

Stability:

Alkali: Moderately stable to weak alkali at normal temperatures. Unstable in the presence of concentrated alkali at elevated temperatures.

Acids: Decomposes in the presence of mineral acids. Moderately stable to weak organic acids.

Solubility:

Soluble in all proportions with Benzyl Benzoate, Diethyl Phthalate and most fixed oils.

Soluble with cloudiness in mineral oil and Propylene Glycol.

Insoluble in Glycerine.

Containers

Should be shipped preferably in glass, tin-lined or aluminum containers. Good quality galvanized or black iron containers are suitable provided long storage is not contemplated.

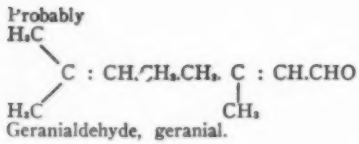
Storage

Store in tight, full containers in a cool place protected from light.

Specifications and Standards for CITRAL PURE

$C_{10}H_{16}O$ Mol. Wt. 152.12

Probably



Geranialdehyde, geranial.

Preparation

Obtained by reaction with Sodium Sulphite or Bisulphite with further purification by distillation and chemical processes, or can also be prepared by the oxidation of the alcohols such as geraniol, nerol and linalool by means of chromic acid or other oxidizing substances.

Physical and Chemical Constants

Color and appearance—A mobile, pale yellow liquid having a strong lemon odor.

Specific Gravity @ 15° C.: 0.891 to 0.897.

Optical Rotation: Inactive.

Refractive Index @ 20° C.: 1.4860 to 1.4900.

Solubility: Soluble in 7 volumes of 60% alcohol.

Sodium Bisulphite Solubility Test

Introduce 5 cc of Citral into a 100 cc Cassia Flask and add 5 cc of a 30% solution of freshly prepared Sodium Bisulphite. Shake the cassia flask in a water bath for 2 minutes, then add 50 cc of additional bisulphite solution and shake flask in the water bath until completely reacted, which is indicated by an apparently clear solution. Then add enough hot distilled water to raise the meniscus within the graduated portion of the flask. No oil separates when the solution is cooled.

Citral Content

Not less than 97%.

Method: Proceed as directed in the hydroxylamine method for aldehydes (See Determinations G.T. D), using approximately 1 gram of sample, accurately weighed. The difference in the cc of $\frac{N}{2}$ HCL required for both titrations multiplied by 0.07611 indicates the weight in grams of Citral in the sample taken for assay.

Solubility

Benzyl Benzoate: All proportions.

Diethyl Phthalate: All proportions.

Fixed Oils: All proportions.

Glycerine: Insoluble.

Mineral Oil: All proportions.

Propylene Glycol: All proportions.

Stability

Alkali: Not stable.

Acids: Not stable.

Containers

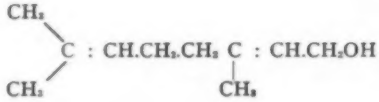
Citral should preferably be shipped in glass. Good grade tins may be used if long storage is not contemplated.

Storage

Store preferably in tight full containers in a cool place protected from light.

Specifications and Standards for Geraniol

$C_{10}H_{17}OH$ Mol. Wt. 154.24



Preparation

Obtained from such essential oils as Citronella Java and Palmarosa Oil, and other essential oils.

Physical and Chemical Constants

Color and Appearance—Colorless liquid, having a rose-like odor.

Specific Gravity 15° C.: .870 to .890.

Optical Rotation: —2° to + 2°.

Refractive Index @ 20° C.: 1.4710 to 1.4780.

Solubility in Alcohol—Soluble in two and more volumes of 70% alcohol.

Total Alcohol Content—Not less than 88% $C_{10}H_{17}OH$.

Method: Proceed as directed for the determination of total acohols (See Determinations G.T. B), using approximately 1.2 gms of acetylized oil, accurately weighed for the saponification. Calculate the percentage of total alcohols as geraniol, using the following formula:

$$\text{Total Alcohols} = \frac{A \times 7.712}{B - (A \times .021)}$$

"A" is the result obtained by subtracting the number of cc of half normal hydrochloric acid required in the titration from the number of cc of half normal alcoholic potassium hydroxide originally taken.

"B" is the weight of acetylized oil.

Ester Content—Not more than 1% calculated as Geranyl Acetate.

Method: Proceed as directed for the de-

termination of esters (See Determinations G.T. A), using approximately 5 gms. of sample accurately weighed. The number of cc of half normal alcoholic potassium hydroxide consumed in the saponification, multiplied by .0981 indicates the gms. of ester calculated as geranyl acetate.

Aldehyde Content—Not more than 1% calculated as Citronellal.

Method: Proceed as directed in the Hydroxylamine Method for aldehydes (See Determinations G.T. D), using approximately 5 gms. of sample accurately weighed and allow the test to stand for 15 minutes at room temperature. The difference in the number of cc required for the titration of the blank and the sample multiplied by .07712 indicates the number of grams of aldehyde calculated as citronellal.

Descriptive Characteristics

Solubility:

Diethyl Phthalate: Soluble in all proportions.

Benzyl Benzoate: Soluble in all proportions.

Mineral Oil: Soluble in all proportions.

Fixed Oils: Soluble in all proportions.

Glycerine: Insoluble.

Propylene Glycol: Soluble in all proportions.

Stability:

Acids: Not stable.

Alkali: Fairly stable at moderate temperatures.

Containers

Should be shipped preferably in glass or tin-lined containers. Good quality galvanized containers are suitable provided long storage is not contemplated.

Storage

Store in tight, full containers in a cool place, protected from light.

Specifications and Standards for GERANYL ACETATE

$C_{10}H_{17}O_2C_2H_3$ Mol. Wt. 196.28

Preparation

Obtained from Geraniol by acetylation.

Physical and Chemical Constants

Color and Appearance—Colorless liquid having a pleasant flowery odor.

Specific Gravity @ 15° C.: 0.907 to 0.918.

Optical Rotation: —2° to +2°.

Refractive Index @ 20° C.: 1.4580 to 1.4640.

Ester Content: Not less than 90%.

Proceed as directed for the determination of esters (See G.T. A), using approximately 1.0 gram of sample accurately weighed. The number of cc of half normal potassium hydroxide solution consumed in the saponification, multiplied by 0.0981, indicates the number of grams of ester calculated as Geranyl Acetate in the sample taken for assay.

Solubility in Alcohol—Soluble in 8 volumes of 70% alcohol.

Descriptive Characteristics

Solubility:

Benzyl Benzoate: Soluble in all proportions.

Diethyl Phthalate: Soluble in all proportions.

Fixed Oils: Soluble in all proportions.

Glycerine: Insoluble.

Mineral Oil: Soluble in all proportions.

Propylene Glycol: Not completely soluble in all proportions.

Stability:

Acids: Fairly stable to weak organic acids.

Alkali: Unstable to alkalies, due to saponification of the ester with subsequent liberation of free geraniol.

Containers

Geranyl Acetate should be shipped in glass, aluminum, tin-lined or good quality galvanized iron containers.

Storage

Store preferably in tight, full containers in a cool place, protected from light.

Specifications and Standards for CITRONELLOL

Preparation

Reduction of citronellal or geraniol or obtained from essential oils such as geranium and citronella, etc.

Physical and Chemical Constants

Color and Appearance—Colorless liquid having a roselike odor.

Specific Gravity 15° C.: .849 to .868.

Optical Rotation: —3° to +3°.

Refractive Index @ 20° C.: 1.4460 to 1.4600.

Solubility in Alcohol—Soluble in two and more volumes of 70% alcohol.

Total Alcohol Content—Not less than 90% calculated as $C_{10}H_{19}OH$.

Method: Proceed as directed for the determination of total alcohols (See Determinations G.T. B), using approximately 1.2 gms. of the acetylized oil accurately weighed for the saponification. Calculate the percentage of total alcohols as citronellol, using the following formula:

$$\text{Total Alcohols} = \frac{A \times 7.813}{B - (A \times .021)}$$

"A" is the result obtained by subtracting the number of cc of half normal hydrochloric acid required in the titration from the number of cc of half normal alcoholic potassium hydroxide originally taken.

"B" is the weight of acetylized oil.

Ester Content—Not more than 1% calculated as citronellyl acetate.

Method: Proceed as directed for the determination of esters (See Determinations G.T. A), using approximately 5 gms. of sample accurately weighed. The number of cc of half normal alcoholic potassium hydroxide consumed in the saponification, multiplied by .0991, indicates the gms. of ester calculated as citronellyl acetate.

Aldehyde Content—Not more than 1% calculated at Citronellal.

Method: Proceed as directed in the Hydroxylamine Method for aldehydes (See Determinations G.T. D), using approximately 5 gms. of sample accurately weighed and allow the test to stand for 15 minutes at room temperature. The difference in the number of cc required for the titration of the blank and the sample multiplied by .07712 indicates the number of gms. of aldehyde calculated as citronellal.

Descriptive Characteristics

Solubility:

Diethyl Phthalate: Soluble in all proportions.

Benzyl Benzoate: Soluble in all proportions.

Mineral Oil: Soluble in all proportions.

Fixed Oils: Soluble in all proportions.

Glycerine: Insoluble.

Propylene Glycol: Soluble in all proportions.

Stability:

Acids: Fairly stable to dilute acids.

Alkali: Fairly stable.

Containers

Should be shipped preferably in glass or tin-lined containers. Good quality galvanized or black iron containers are suitable provided long storage is not contemplated.

Storage

Store in tight, full containers in a cool place, protected from light.

Specifications and Standards for SAFROL

$C_{10}H_{10}O$ M.W. = 162.13

Preparation

By isolation from brown Camphor Oil, Oil Ocotea Cymbarum and Oil Sassafras.

Physical and Chemical Constants

Specific Gravity @ 15° C: 1.100 to 1.107.

Optical Rotation @ 15° C: —0°30′ to + 0°30′.

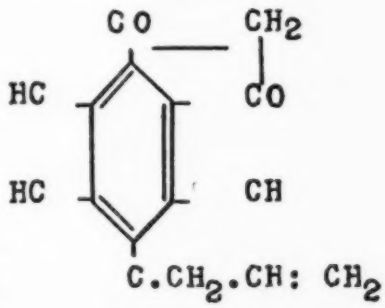
Refractive Index @ 20° C: 1.5363 to 1.5385.

Congealing Point: 10° C. to 11.2° C.

Solubility 90% Alcohol: 3 volumes.

Color: Water white to slight yellow.

Odor: Characteristic of Sassafras.



Descriptive Characteristics

Solubility:

Benzyl Benzoate: All proportions.

Fixed Oils: All proportions.

Glycerine: Insoluble.

Mineral Oil: Soluble.

Propylene Glycol: Slightly soluble.

Water: Insoluble.

Stability:

Alkali: In the presence of strong alkali a pink or red discoloration changing to yellow or brown on standing is often observed.

Acids: In the presence of some organic and inorganic acids a change is noted, the degree of change depending upon the conditions.

Oxidation: Relatively resistant to oxidation at ordinary temperatures and conditions.

Containers

Safrol should be shipped in glass, aluminum or tin-lined containers. Good quality galvanized containers are suitable when long periods of storage are not contemplated.

Storage

Store preferably in tight, full containers in a cool place protected from light.

Specifications and Standards for NITRO MUSKS

Preparation

Nitration of the corresponding benzene derivative.

Physical and Chemical Constants

Musk Xylol.

Color and Appearance: Yellow crystalline powder or needle-like crystals.

Odor: Suggestive of musk.

Melting Range: 112.5 to 114.5° and 104 to 106° C.

Two melting points have been observed for Musk Xylol, a low melting or "labile" modification melting at 104-106°, and the higher melting or "stable" form melting at 112.5° to 114.5°. When the low-melting form is encountered, permit the melt to resolidify and redetermine the melting point. This procedure permits the necessary transition to the higher melting form. A persistent low melting point, after solidification, generally indicates a contaminated or unrefined product.

Musk Ambrette: Color and appearance: Yellow granular crystals.

Odor: Powerful musk-like odor with suggestion of Ambrette seeds.

Melting Range: 84° to 86° C.

Musk Ketone: Color and appearance: Pale yellow platelets or fine crystalline powder.

Odor: Musklike odor considered as more closely resembling natural musk than other nitrated products.

Melting Range: 134.5 to 136.5° C.

Descriptive Characteristics

Stability:

The nitro musks are relatively stable to oxidation, dilute acids, and alkalis, although some discoloration may be noted with Musk Ambrette in the presence of alkaline materials. Exposure to sunlight generally effects a discoloration of the nitro-musks.

Containers

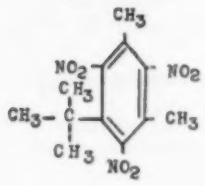
Small quantities in paper-lined tin cans. Large quantities are usually packed in wooden barrels or fiberboard and pressboard containers.

Storage

The nitro musks are best preserved by storage in a cool place protected from light.

Solubility:	*Musk Xylol*	*Musk Ambrette*	*Musk Ketone*
Alcohol 95% 25° approx.	Sl. Sol. (0.7 gms. per 100 cc)	Sl. Sol. (2.6 gms. per 100 cc)	Sl. Sol. (1.4 gms. per 100 cc)
Benzyl Benzoate 25° approx.	Sol. 28 gms. per 100 cc)	Sol. (56 gms. per 100 cc)	Sol. (28 gms. per 100 cc)
Diethyl Phthalate 25° approx.	Sol. (17 gms. per 100 cc)	Sol. (44 gms. per 100 cc)	Sol. (16 gms. per 100 cc)
Fixed Oils	Sol.	Sol.	Sol.
Volatile Oils	Sol.	Sol.	Sol.
Glycerine	Insol.	Insol.	Insol.
Propylene Glycol	Insol.	Insol.	Sl. Sol.
Mineral Oil	Sol.	Sl. Sol.	Sl. Sol.
Water	Insol.	Insol.	Insol.

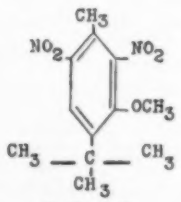
Musk Xylol



$C_{12}H_{15}O_6N_3$
M.W. = 297.45

2, 4, 6-Trinitro 1, 3-Dimethyl 5-tertiary Butyl Benzene

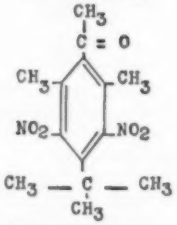
Musk Ambrette



$C_{12}H_{16}O_5N_2$
M.W. = 268.41

2, 6-Dinitro 3-Methoxy 4-tertiary Butyl Toluene

Musk Ketone



$C_{14}H_{18}O_5N_2$
M.W. = 294.44

3, 5-Dinitro 2, 6-Dimethyl 4-tertiary Butyl Acetophenone

OIL PALMAROSA Specifications and Standards for

Other General Names

Oil Geranium, East Indian.
Oil Geranium, Turkish.

Botanical Nomenclature

Cymbopogon Martini Stapf. var. *Motia.*

Preparation

Obtained by steam distillation of the partially dried grass.

Physical and Chemical Properties

Color and Appearance: A light yellow to yellow oil. As imported, it is often hazy and brownish because of the crude methods of production.

Specific Gravity at 15° C.: 0.885 to 0.897.

Optical Rotation —2° to +3°.

Refractive Index at 20° C.: 1.4730 to 1.4775.

Ester Contents: 4% to 13% (Java oils: as high as 18%).

Proceed as directed for the Determination of Esters (see G.T.A.), using approximately 5.0 grams of the oil, accurately weighed. The number of cc of half-normal alcoholic potassium hydroxide consumed in the saponification, multiplied by 0.0981, indicates the number of grams of esters, calculated as Geranyl Acetate, in the oil taken for assay.

Total Alcohol Content: 88% to 94%.

Proceed as directed for the Determination of Total Alcohols (see G.T. A.), using approximately 1 gram of the acetylized oil, accurately weighed, for the subsequent saponification. Calculate the percentage of Total Alcohols, calculated as Geraniol, by the following formula:

$$\text{Per cent of Total Geraniol} = \frac{A \times 7.712}{B - (A \times 0.021)} \times \left\{ 1 - (E \times 0.0021) \right\}$$

A is the result obtained by subtracting the number of cc of half normal hydrochloric acid required in the titration from the number of cc of half normal alcoholic potassium hydroxide originally taken.

B is the weight of acetylized oil taken.

E is the precentage of ester.

Solubility in Alcohol: Soluble in 2 volumes of 70% alcohol.

Descriptive Characteristics

Solubility:

Benzyl Benzoate: Soluble in all proportions.

Fixed Oils: Soluble in all proportions.

Glycerin: Relatively insoluble.

Mineral Oil: Soluble, usually with opalescence or turbidity.

Propylene Glycol: Soluble in all proportions.

Stability:

Acids: Unstable in the presence of strong acids.

Alkali: Relatively stable in the presence of alkalies at moderate temperatures.

Containers

Should be shipped preferably in glass or tin-lined containers. Good quality galvanized containers are suitable, provided long storage is not contemplated.

Storage

Store in tight, full containers in a cool place, protected from light

Specifications and Standards for BENZYL ACETATE

$C_6H_5CH_2O_2C_2H_3$ Mol. Wt. 150.17

Preparation

Prepared by the interaction of Benzyl Chloride and Sodium Acetate in the presence of glacial acetic acid and by acetylation of Benzyl Alcohol.

Physical and Chemical Constants

Color and Appearance: Colorless liquid having a characteristic flowery odor.

Specific Gravity @ 15° C.: 1.059 to 1.062.

Refractive Index @ 20° C.: 1.5015 to 1.5035.

Acid Value: Maximum 1.0

Proceed as directed for the determination of Acid Value. (See Determinations G.T. E.)

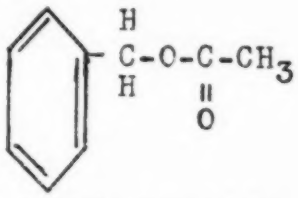
Ester Content: 98% Minimum.

Assay: Proceed as directed for determination of Esters. (See Determinations G.T. A) using approximately 0.9 gm sample accurately weighed. The number of cc. of half-normal Potassium Hydroxide solution consumed in the saponification multiplied by 0.0751 indicates the number of grams of ester calculated as Benzyl Acetate in the sample taken for assay. (This result should be corrected for Acid Value. See Determination G.T. E.)

Chlorine: Negative.

Proceed as directed for the determination of Chlorinated Compounds. (See Determinations G.T. G.)

Solubility in Alcohol: Soluble in 5 volumes of 60% Alcohol.



Descriptive Characteristics

Stability:

Alkali: Unstable to alkali due to saponification of the ester with subsequent liberation of free Benzyl Alcohol.

Acids: Fairly stable to weak organic acids.

Solubility:

Benzyl Benzoate: Soluble in all proportions.

Diethyl Phthalate: Soluble in all proportions.

Fixed Oils: Soluble in all proportions.

Alcohol: Soluble in all proportions.

Mineral Oil: Soluble.

Propylene Glycol: Soluble.

Glycerine: Insoluble.

Water: Insoluble.

Containers

Should be shipped in glass, aluminum or tin-lined containers. Good quality galvanized containers are suitable when long storage is not contemplated.

Storage

Store preferably in tight, full containers in a cool place protected from light.

Specifications and Standards for LINALYL ACETATE

(90% from Bois de Rose Brazilian)

$C_{10}H_{17}O_2C_2H_3$ Mol. Wt. 196.28

Preparation

Obtained from Bois de Rose Brazilian by acetylation and subsequent fractionation.

Physical and Chemical Constants

Color and Appearance—Colorless to slightly yellow having a pleasant flowery odor.

Specific Gravity 15° C.: 0.908 to 0.920.

Optical Rotation: —1 to +1.

Refractive Index 20° C.: 1.450 to 1.458.

Acid Value: Not more than 2.

Ester Content: Not less than 90%.

Assay

Proceed as directed for determination of esters (See Determinations G.T. A) using approximately 1.0 gm. sample accurately weighed. The number of cc of half-normal Potassium Hydroxide Solution consumed in the saponification multiplied by 0.0981 indicates the number of grams of ester calculated as Linalyl Acetate in the sample taken for assay. This result should be corrected for Acid Value (See Determination G.T. E.)

Descriptive Characteristics

Solubility in Alcohol: Soluble in 5 volumes of 70% Alcohol.

Solubility:

Diethyl Phthalate: Soluble in all proportions.

Benzyl Benzoate: Soluble in all proportions.

Mineral Oil: Soluble in all proportions.

Fixed Oils: Soluble in all proportions.

Alcohol: Soluble in all proportions.

Propylene Glycol: Slightly soluble; about 5%.

Water: Insoluble.

Glycerine: Insoluble.

Stability:

Acids: Not very stable; strong acids transform Linalyl Acetate into terpenic products.

Alkali: Unstable to alkalis due to saponification of the ester with subsequent liberation of free Linalool.

Containers

Linalyl Acetate should be shipped in glass, aluminum, tin-lined or good quality galvanized iron containers.

Storage

Store preferably in tight, full containers in a cool place protected from light.

Specifications and Standards for OIL CEDARWOOD and CEDARWOOD TEXAS

Botannical Nomenclature

Juniperus virginiana, L.: Oil of Red Cedarwood.

Oil Cedar.

Oil Cedarwood American.

Juniperus Mexicana, Scheide, and closely related species: Oil Cedarwood Texas.

Preparation

By steam distillation of the chopped and ground wood.

Physical and Chemical Constants

(See Table Below)

Descriptive Characteristics

Stability:

Alkali: Fairly stable to alkali.

Acids: Fairly stable to weak acids.

Solubility:

Benzyl Benzoate: Soluble in all proportions.

Fixed Oils: Soluble in all proportions in most fixed oils.

Glycerine: Relatively insoluble.

Mineral Oil: Soluble in all proportions.

Propylene Glycol: Relatively insoluble.

Containers

Should be shipped in glass, tin-lined, or aluminum containers. Good quality galvanized containers are suitable when long storage is not contemplated.

Storage

Store preferably in tight, full containers in a cool place protected from light.

	Juniperus Virginiana	*Juniperus Mexicana*
Color and Appearance:	Colorless to light yellow slight viscous liquid	Colorless to yellow slightly viscous liquid
Specific Gravity @ 15° C.:	0.945 to 0.9060	0.950 to 0.960
Optical Rotation:	—27° to —45°	—35° to —50°
Refractive Index @ 20° C.:	1.5020 to 1.5070	1.5040 to 1.5070
Solubility in Alcohol:	Soluble in 5 volumes of 95% alcohol	Soluble in all proportions of 95% alcohol

Specifications and Standards for METHYL ANTHRANILATE

$C_8H_9O_2N$ Mol. Wt. 151.08

Preparation

Esterfication of anthranilic acid.

Physical and Chemical Properties

Color and Appearance: Colorless to pale yellow liquid with bluish fluorescence, having an odor of the grape type.

Specific Gravity @ 15° C.: 1.167 to 1.175.

Refractive Index @ 20° C.: 1.5820 to 1.5840.

Congealing Point: Min. 23.8° C.

Proceed as directed for the determina-

tion of Congealing Temperature. (See U.S.P. XIII, page 629.)

Solubility in Alcohol: Soluble in 5 volumes and more of 60% alcohol.

Descriptive Characteristics

Solubility:

Benzyl Benzoate: All proportions.
Diethyl Phthalate: All proportions.
Fixed Oils: All proportions.
Glycerine: Insoluble.
Mineral Oil: Partly soluble.
Propylene Glycol: All proportions.
Volatile Oils: Partly or all proportions.

Stability:

Acids—Fairly stable to organic acids.
Alkali—Stable in weak alkaline media, saponified by caustic alkali.

Containers

Should be shipped in glass, aluminum or in tin-lined containers.

Storage

Store preferably in tight, full containers in a cool place, protected from light. Prolonged storage or exposure to light may cause discoloration.

Specifications and Standards for ACETOPHENONE

C_8H_8O Mol. Wt. 120.14

Methyl phenyl ketone; Acetyl benzene; Hypnone.

Acetophenone is found in nature and is produced synthetically. Most acetophenone consumed is of the synthetic type. It is used in perfumery and the pharmaceutical trade.

Preparation

It may be synthesized from benzene, anhydrous aluminum chloride and acetic anhydride or acetyl chloride by the Friedel-Crafts synthesis and by the oxidation of ethyl benzene.

Physical & Chemical Properties

Color, Appearance and Odor: It is an almost colorless liquid at room temperature having a very sweet pungent odor.

Specific Gravity at 25°/25°: 1.025—1.028.

Refractive Index at 20°C.: 1.5330—1.5350.

Congealing Point: 19°C. minimum.

Proceed as directed for determination of congealing points. (See H)

Purity: Minimum of 98% by the hydroxylamine method. (See D)

Use approximately 1.0 gm. sample accurately weighed. The difference in the cc of N/2 HCl required for both titrations multiplied by 0.06007 indicates the weight in grams of Acetophenone in the sample taken for Assay.

Chlorine: Negative. Proceed as directed for the determination of chlorinated compounds. (See G)

Solubility in Alcohol: Soluble in 5 volumes of 50% Alcohol.

Descriptive Characteristics

Stability:

Acids: Relatively stable in most acids.
Alkali: Relatively stable.

Solubility:

Benzyl Benzoate: Soluble in all proportions.
Diethly Phthalate: Soluble in all proportions.
Fixed Oils: Soluble in all proportions in most fixed oils.
Mineral Oil: Slightly soluble.
Propylene Glycol: Soluble in all proportions.
Glycerine: Insoluble.

Containers

Should be shipped in glass, aluminum, tin-lined or iron containers.

Storage

No unusual precautions.

Specifications and Standards for OIL BOIS DE ROSE BRAZILIAN

Other General Name

Oil Rosewood.

Botanical Nomenclature

1. Indefinite.
2. Possibly:
   (a) ANIBA ROSAEODORA var. Amazonica (Ducke), Family: Lauraceae.
   (b) ANIBA PARVIFLORA (Mez), Family: Lauraceae.
   (c) OCOTEA CAUDATA (Mez.) (LICARIA GUIANENSIS) (Aubl.), Family: Lauraceae.
   (d) PROTIUM (ICICA) ALTISSIMUM (March), Family: Burseraceae.

Preparation

By steam distillation of wood.

Physical and Chemical Constants

Specific Gravity @ 15°C.. 0.8750—0.8950
Optical Rotation ..... −4° to + 5°
Refractive Index @ 20°C. 1.4620—1.4685
Total Alcohols: ..... 84 to 92%

Proceed as directed for the determination of Linalool and oils containing Linalool. (See C.) Use approximately 1.2 gms. of acetylized oil accurately weighed for the subsequent saponification.

Solubility—Soluble in some dilution between 3.5 and 6 volumes of 60% alcohol and in 2 volumes of 70% alcohol.

Color and appearance—Pale yellow to yellow liquid.

Descriptive Characteristics

Stability:

Alkali: Relatively stable to alkali, although some change takes place.

Acids: In the presence of some organic acids esterfication of the alcohol takes place. In the presence of many strong inorganic acids, decomposition takes place. Degree of change depends upon conditions.

Solubility

Benzyl Benzoate: Generally soluble.
Fixed Oils: Soluble in all proportions in most fixed oils.
Glycerine: Slightly soluble.
Mineral Oil: It is usually soluble in ½ volume of mineral oil, but sometimes becomes opalescent to turbid; when further additions of the solvent are made.
Propylene Glycol: Soluble in all proportions.

Containers

Should be shipped in glass, tin lined or aluminum containers. Good quality galvanized containers are suitable when long storage is not contemplated.

Storage

Store preferably in well stoppered full containers, in a cool place protected from light.

Specifications and Standards for OIL PETITGRAIN PARAGUAY

Other General Names

Oil Petitgrain South American.

Botanical Nomenclature

Citrus bigaradia, Risso.

Preparation

Obtained by steam distillation from the leaves and twigs of the bitter orange tree; at times the fruit adhering to the branches is distilled with it, indicated by a dextrorotation due to some peel oil.

Physical and Chemical Properties

Color: Yellowish to slightly brown.

Specific Gravity @ 15° C.: 0.885 to 0.895.

Optical Rotation: Mostly laevorotatory up to —3° sometimes dextrorotatory up to + 3°.

Solubility: Soluble at some dilution between 2 and 4 volumes of 70% alcohol; however, upon further dilution it frequently becomes opalescent or turbid.

Refractive Index @ 20° C.: 1.4580 to 1.4650.

Esters: 45% to 55% (occasionally as low as 40% and as high as 60%).

Proceed as directed for the determination of esters (see A), using approximately 2 grams of the oil, accurately weighed. The number of cc. of 0.5 N alcoholic potassium hydroxide consumed in the saponification, multiplied by 0.0981, indicates the number of grams of esters, calculated as linalyl acetate, in the oil taken for assay.

Descriptive Characteristics

Stability:

Alkali: Unstable in alkalies due to the hydrolysis of some of the esters and the liberation of free linalool and other alcohols.

Acids: In the presence of some organic or inorganic acids a change is noted, degree of change depending upon conditions.

Solubility:

Benzyl Benzoate: Soluble in all proportions.
Fixed Oils: Soluble in all proportions in most fixed oils.
Glycerine: Slightly soluble.
Mineral Oil: Usually soluble with opalescence or turbidity.
Propylene Glycol: Usually soluble with opalescence.

Containers

Should be shipped preferably in glass, tin-lined, or aluminum containers. Good quality galvanized containers are suitable when long storage is not contemplated.

Storage

Store preferably in well-stoppered, full containers, in a cool place protected from light.

Specifications and Standards for Oil Spike

Other General Names

Oil Lavender Spike.
Oil Lavender Spanish.
Oil Spanish Spike.
Oil Aspic.

Botanical Nomenclature

Lavandula latifolia, Vill. (Lavandula Spica D.C.), Family: LABIATAE.

Preparation

By steam distillation of the flowers.

Physical and Chemical Constants

Color and appearance: Oil Spike is a pale yellow to yellow liquid, having a camphoraceous, lavender-like odor.

Specific Gravity @ 15° C.: 0.900—0.915.

Optical Rotation:—5° to + 5°.

Refractive Index 20° C.: 1.4630 to 1.4680.

Esters as Bornyl Acetate: 1.5 to 3.0%.

Proceed as directed for the determination of esters, see A, using approximately 10 grams of Oil Spike, accurately weighed. The number of CC of half normal alcoholic potassium hydroxide consumed in the saponification, multiplied by 0.0981, indicates the number of grams of esters calculated as Bornyl Acetate ($C_{10}H_{17}C_2H_3O_2$) in the oil taken for assay.

Total Alcohols as Borneol: 30-40%.

Proceed as directed for the determination of total alcohols, Page B, using approximately 2.5 grams of the acetylized oil, accurately weighed, for the subsequent saponification. Calculate the per cent of total alcohols as Borneol by the following formula:

Per Cent of total Borneol ($C_{10}H_{17}OH$) in the oil tested

$$\frac{A \times 7.712}{B-(A \times 0.021)} \times [1-(E \times 0.0021)]$$

A is the result obtained by subtracting the number of cc of half normal sulphuric acid required in the titration from the number of cc of half normal alcoholic potassium hydroxide originally taken.

B is the weight of acetylized oil taken, and E is the per cent of esters calculated as Bornyl Acetate.

Solubility in Alcohol: Soluble in some dilution between 1 and 3 volumes of 70% alcohol, however, upon further dilution it frequently becomes hazy.

Descriptive Characteristics

Stability:

Alkali: Relatively stable to alkali, although some change takes place.

Acids: Fairly stable to weak acids.

Solubility:

Benzyl Benzoate: Soluble in all proportions.

Fixed Oils: Soluble in all proportions in most fixed oils.

Glycerin: Slightly soluble.

Mineral Oil: Usually forms cloudy solutions.

Propylene Glycol: Soluble in all proportions.

Containers

Should be shipped preferably in glass, tin-lined or aluminum containers. Good quality galvanized containers are suitable when long storage is not contemplated.

Storage

Store preferably in well stoppered full containers, in a cool place protected from light.

Specifications and Standards For Hydroxycitronellal

$C_{10}H_{20}O_2$ Mol. Wt. 172.26

(Various other structures are suggested)

Preparation

Obtained by the hydration of citronellal. The basic citronellal used may be from any source such as the optically active variety from Java Citronella or the optically inactive variety from Eucalyptus Citriodora.

Physical and Chemical Constants

Color and appearance: Viscous colorless liquid having a sweet odor of the lily type.

Specific Gravity @ 15°C.: 0.925 to 0.930.

Optical Rotation: Depends upon the optical activity of the raw material. When prepared from the Java type + 9 to + 10.5; when prepared from Eucalyptus Citriodora type + 0.5 to — 0.5.

Refractive Index @ 20°: 1.448—1.450.

Hydroxycitronellal Content: Not less than 95%. (See D.)

Assay — Hydroxycitronellal determination:

Proceed as directed in the hydroxylamine method for aldehydes (see D) using approximately 1.3 gm. of sample, accurately weighed. The difference in the cc of N/2 HCl required for both titrations multiplied by 0.0861 indicates the weight in grams of Hydroxycitronellal in the sample taken for assay.

Solubility in Alcohol: Soluble in 1½ and more volumes of 50% alcohol. Soluble in all proportions of 60% alcohol.

Bisulfite Test for non-aldehydic impurities: Add 9 cc of $NaHSO_3$ solution* to .5 cc Hydroxycitronellal. Shake vigorously for one minute. Clear solution should be obtained (terpenes). Solution should have no minty odor (isopulegol).

* (Bisulfite Solution—Prepare a fresh solution of 30% $NaHSO_3$ anhydrous by weight. To this add 4% of 10% Na_2CO_3 solution to cut down free SO_2. Solution to be filtered clear before use if necessary.)

Descriptive Characteristics

Stability:

Acids: Easily resinified by acids.

Alkali: Easily resinified by strong alkali.

Oxidation: Very readily oxidized by exposure to air.

Solubility:

Benzyl Benzoate: Soluble in all proportions.

Diethyl Phthalate: Soluble in all proportions.

Fixed Oils: Soluble in all proportions in most fixed oils.

Glycerin: Slightly soluble.

Mineral Oil: Slightly soluble.

Propylene glycol: Soluble in all proportions.

Water: Slightly soluble (app. 5%).

Containers

Should be shipped preferably in glass, tin-lined or aluminum containers. Galvanized containers not recommended.

Storage

Store preferably in well-stoppered, full containers in a cool place protected from light.

Specifications and Standards For DIPHENYL OXIDE

$C_6H_5O.C_6H_5$ Mol. Wt. 170.2

Diphenyl Oxide is a synthetic aromatic, crystalline at or below room temperature. It is widely used in soap perfumery for its stability and its low price. Its odor simulates that of geranium leaves.

Preparation

Diphenyl oxide can be prepared by the reaction of chlorobenzene with phenol in the presence of strong caustic.

Physical & Chemical Constants

Color, Appearance and Odor: Diphenyl oxide is a nearly colorless liquid, solidifying at or below room temperature, with a powerful odor of geranium leaves.

Specific Gravity at 25°/25°C.: 1.072—1.074.

Refractive Index at 25°C.: 1.5780—1.5790.

Congealing Point: +26.7° to +27.0°C.

Method: Proceed as directed for the determination of congealing point. (See H)

Descriptive Characteristics

A satisfactory quality of Diphenyl Oxide should not reveal any phenolic off-odor when in the liquid state.

Stability:

Acid and Alkali: Stable in contact with mild alkali or acid at ordinary temperatures and conditions as encountered in the preparation and storage of cosmetics and soaps.

Solubility:

Benzyl Benzoate: Very Soluble.
Diethyl Phthalate: Very Soluble.
Fixed Oils: Very Soluble.
Alcohol: Very Soluble.
Mineral Oil: Very Soluble.
Propylene Glycol: Sparingly Soluble.
Glycerine: Practically insoluble.
Water: Practically insoluble.

Containers

Should be shipped in glass, galvanized or tin-lined steel containers.

Storage

No unusual precautions.

Specifications and Standards for Oil of Siberian Fir Needles

Physical and Chemical Constants

Color & Appearance: almost colorless or faintly yellow.

Specific Gravity @ 25°C: .898 to .912. (Correction factor from n°/n°C: 0.0056 per °C.)

Optical Rotation: —34° to —43°.

Refractive Index @ 20°C: 1.4685 to 1.4730.

Solubility in Alcohol: Soluble in 1 volume of 90 per cent alcohol. Occasionally hazy upon further dilution.

Ester Content: 32 per cent to 44 per cent calculated as Bornyl Acetate.

Proceed as directed for the determination of esters using approximately 2 grams of oil accurately weighed. The number of cc of N KOH consumed in

$$\frac{2}{}$$

the saponification multiplied by .0981 indicates the number of grams of esters calculated as Bornyl Acetate in the sample taken for assay.

Descriptive Characteristics

Stability:

Alkali: Unstable due to the hydrolysis of the ester.

Acids: Fairly stable to weak organic acids. Unstable in the presence of strong acids.

Solubility:

Benzyl Benzoate: Soluble.

Fixed Oils: Soluble in most fixed oils.

Glycerine: Insoluble.

Mineral Oil: Soluble.

Propylene Glycol: Insoluble.

Containers

Should be shipped preferably in glass, tin-lined or aluminum containers. Good quality galvanized containers are suitable if long storage is not contemplated.

Storage

Store preferably in tight full containers in a cool place protected from light.

Specifications and Standards For OIL GERANIUM REUNION

Preparation

Obtained by steam distillation of the fresh plants, harvested at the period of initial bloom.

Physical and Chemical Properties

Color & Appearance: A yellowish brown oil, having a strong, heavy rose-like odor with a characteristic minty top-note.

Specific Gravity @ 25°/25°C: 0.883 to 0.890.

(Gravity factor from n°/n°: 0.00059 per °C.)

Optical Rotation: —°8 to —14°.

Refractive Index @ 20°C: 1.4629 to 1.4680.

Acid Value: Not more than 11. Proceed as directed for the determination of Acid Value using approximately 5 grams of the sample, accurately weighed, and 15-cc of water as diluent instead of alcohol. It will be necessary to agitate the mixture thoroughly during the titration to keep the oil in suspension.

Ester Value: 52 to 76 (indicating approximately 22 per cent to 32 per cent ester, calculated as Geranyl Tiglate).

Proceed as directed for the determination of Esters using approximately 2.5 grams of the oil accurately weighed. Calculate the Saponification Value by the following formula:

$$S.V. = \frac{28.05 \times a}{s}$$

where a = number of cc of 0.5N alcoholic potassium hydroxide solution consumed in the saponification and s = weight of the oil, in grams. Determine the Ester Value as follows:

E.V. = S.V. —A.V.

Ester Value After Acetylation: 209 to 229 (indicating approximately 68 per cent to 76 per cent total alcohol calculated as geraniol, not corrected for ester.)

Proceed as directed for the determination of Total Alcohols, using approximately 1.5 grams of the acetylated oil, accurately weighed, for the subsequent saponification.

Calculate the Ester Value After Acetylation by the following formula:

$$E.V.A.A. = \frac{28.05 \times a}{s}$$

where a = number of cc of O.5N alcholic potassium hydroxide solution consumed in the subsequent saponification, and s = weight of the acetylated oil, in grams.

Solubility in Alcohol: Soluble in 2.5 volumes of 70 per cent alcohol; upon further dilution, the solution occasionally becomes opalescent.

Descriptive Characteristics

Solubility:

Benzyl Benzoate: Soluble in all proportions.

Fixed Oils: Soluble in all proportions in most fixed oils.

Glycerine: Practically insoluble.

Mineral Oil: Soluble usually with opalescence or turbidity.

Propylene Glycol: Soluble, usually with turbidity.

Stability:

Acids: Unstable in the presence of strong acids.

Alkali: Relatively stable to weak alkali, although Saponification of some of the ester may occur.

Containers

Should be shipped preferably in glass, tin-lined or aluminum containers. Good quality galvanized containers are suitable when long storage is not contemplated.

Storage

Store preferably in tight, full containers in a cool place protected from light.

Specifications and Standards For OIL GERANIUM ALGERIAN

Preparation

Steam distillation of the leaves.

Physical and Chemical Constants

Color & Appearance: Light yellow to deep yellow liquid with characteristic odor resembling rose and geraniol.

Specific Gravity @ 25°/25°C: 0.886 to 0.898.

(Correction factor from n°/n°C: 0.000-58 per °C.)

Optical Rotation: —7° to —13°.

Refractive Index @ 20°C: 1.4640 to 1.4720.

Acid Value: 1.5 to 9.5.

Proceed as directed for the determination of Acid Value using approximately 5 gms. of the sample accurately weighed, and 15-cc of water as diluent instead of alcohol. It will be necessary to agitate the mixture thoroughly during the titration to keep the oil in suspension.

Ester Value: 31 to 70 (indicating a 13 per cent to 29.5 per cent ester calculated as Geranyl Tiglate).

The Percentage of Geranyl Tiglate can be calculated by the following formulae: Ester Value × = % of Geranyl Tiglate

Proceed as directed for the determination of esters using approximately 6 gms. of the oil accurately weighed.

Calculate the Saponification Value by the following formulae:

$$S.V. = \frac{28.05 \times a}{s}$$

where a = the number of cc of 0.5N alcoholic potassium hydroxide solution consumed in the saponification and s = weight of the oil, in grams. Determine the Ester Value as follows:

E.V. = S.V.—A.V.

Ester Value after Acetylation: 203 to 234. (Indicating 66 per cent to 78 per cent of total alcohol calculated as geraniol not corrected for ester).

Proceed as directed for the determination of Total Alcohols using approximately 1.9 gms. of the acetylated oil accurately weighed for the subsequent saponification. Calculate the Ester Value after Acetylation by the following formula:

$$E.V.A.A. = \frac{28.05 \times a}{s}$$

where a = the number of cc of 0.5N alcohol potassium hydroxide consumed in the subsequent saponification and s = the weight in gms of the acetylized oil used.

Percent total geraniol may be calculated by the following formula:

$$E.V.A.A. = \frac{7.712 \times a}{s - (a \times 0.021)}$$

This gives the total geraniol not corrected for ester.

Solubility in Alcohol: Soluble in 2 to 3 volumes of 70 per cent alcohol. On further addition of 70 per cent alcohol opalescence sometimes occurs which may be followed by separation of paraffin particles.

Descriptive Characteristics

Solubility:

Benzyl Benzoate: Soluble in all proportions.

Fixed Oils: Soluble in all proportions in most fixed oils.

Glycerine: Practically insoluble.

Mineral Oil: Soluble in all proportions with opalescence after about 3 volumes.

Propylene Glycol: Soluble in all proportions, with opalescence after about 4 volumes.

Stability:

Alkali: Unstable in alkalies due to hydrolysis of some of the esters.

Acid: Exposure to anything more than mild organic acids risk deterioration of quality.

Containers

Should be shipped preferably in glass, tin-lined or aluminum containers. Good quality galvanized containers are suitable when long storage is not contemplated.

Storage

Store preferably in tight, full containers in a cool place, protected from light.

Specifications and Standards for Amyl Cinnamic Aldehyde

$C_{14}H_{18}O$ Mol Wt. = 202.28

Preparation

It is prepared by the condensation of benzaldehyde with heptaldehyde, usually in an alkaline medium.

Physical and Chemical Constants

Color & Appearance: Yellow liquid with a powerful floral odor which becomes suggestive of jasmin on dilution.

Specific Gravity @ 25°/25°C: 0.963 to 0.968.

(Correction factor from n°/n°C: .0050 per °C.)

Refractive Index @ 20°C: 1.5520 to 1.5580.

Acid Value: Not more than 5.

Proceed as directed for the determination of acid value.

Aldehyde Content: Not less than 97 per cent.

Assay:

Proceed as directed for the determination of aldehydes (See Determinations G.T. #1-D) using an approximately 1.5 gm. sample accurately weighed. Allow sample and blank to stand at room temperature for one-half hour. The difference in cc of N/2 HCl between blank and sample titrations multiplied by 0.1012 indicates the weight in grams of Amyl Cinnamic Aldehyde in the sample taken for assay.

Chlorine: Negative.

Proceed as directed for the determination of chlorinated compounds.

Solubility in Alcohol: Clearly soluble in 4.5 and more volumes of 80 per cent alcohol.

Descriptive Characteristics

Solubility:

Benzyl Benzoate: Soluble in all proportions.

Diethyl Phthalate: Soluble in all proportions.

Fixed Oils: Soluble in all proportions in most fixed oils.

Glycerine: Insoluble.

Mineral Oil: Soluble in all proportions.

Propylene Glycol: Insoluble.

Water: Insoluble.

Stability:

Relatively stable to dilute acids and alkalies.

Containers

Amyl Cinnamic Aldehyde should be shipped in glass, aluminum, steel or tin-lined containers.

Storage

Store in tight full containers in a cool place protected from light. Extremely susceptible to oxidation by air. Cannot be stored unless protected by a suitable anti-oxidant.

Specifications and Standards for Amyl Salicylate

Preparation

$C_{12}H_{16}O_3$ Mol. Wt. 208.25

It is prepared by esterification of salicylic acid with iso-amyl alcohol derived from fusel oils and other sources.

Color and Appearance

Colorless liquid with characteristic aromatic odor.

Sp. Gr. at 15°C: 1.053 to 1.059

Refractive Index at 20°: 1.5050 to 1.5080

Optical Rotation: ±0 to + 2.30°

Acid Value—Not more than 1.

Proceed as directed for the determination of acid value. Note—Instead of phenolphthalein a phenol-red indicator should be used.

Ester Content—Not less than 99 per cent.

Assay: Place about 2 cc of Amyl Salicylate, accurately weighed in a 250 cc flask, add 50 cc of half-normal alcoholic potassium hydroxide, connect the flask with a reflux condenser, and heat the mixture on a water bath for 2 hrs. Add 50 cc water, a few drops of phenol red pH indicator and titrate the excess of alkali with half-normal hydrochloric acid. Each cc of half-normal alcoholic potassium hydroxide consumed in the saponification correspond to .1041 gm. of amyl salicylate.

Solubility in Alcohol—Soluble in 2 to 3 vol. of 90 per cent alcohol.

Descriptive Characteristics

Solubility—

Diethyl Phthalate—Soluble in all proportions.

Benzyl Benzoate—Soluble in all proportions.

Mineral Oil—Soluble in all proportions.

Fixed Oils—Soluble in all proportions.

Glycerine—Insoluble.

Propylene Glycol—Insoluble.

Stability—

Acid—Stable to weak acids.

Alkali—Unstable in presence of strong alkali due to saponification of the ester.

Containers

Should be shipped in glass or tin-lined drums.

Storage

Store preferably in tight, full containers in a cool place protected from light.

Specifications and Standards For Oil of Sage Dalmatian

Oil of Sage Dalmatian is distilled from *Salvia officinalis* L. It should not be confused with sage oils distilled from other botanicals; e.g. Oil of Spanish Sage, Oil of Clary Sage, Oil of American Sagebrush. The true Dalmatian Sage Oil is produced on the Dalmatian Islands and the adjacent coast of the Adriatic Sea.

Early in the commercial development of this product, there occurred two types of oil; "high-test" "low test" oils which were distinguishable by their ketone contents. Today only the "high-test" oils are commercially available since this type is preferred by the trade and is generally considered to be of superior quality.

The best grade of Dalmatian Sage Oil contains not less than 50% of ketones, calculated as thujone. The specifications which follow have been written for oils of this quality.

Botanical Nomenclature

Salvia officinalis, L.

Preparation

Obtained by steam distillation of the partially dried leaves.

Physical & Chemical Constants

Color and Appearance: A yellowish or greenish-yellow liquid having a warm camphoraceous and thujone-like odor and flavor.

Specific Gravity at 25°/25°C.: 0.903—0.925.

Optical Rotation: +2° to +29°.

Refractive Index at 20°C.: 1.4570—1.4690.

Saponification Value: 6 to 20.

Proceed as directed for the determination of esters. (See A) using approximately 5.0 grams of the oil, accurately weighed. Calculate the saponification value by the following formula:

$$\text{S.V.} = \frac{A \times 28.05}{B}$$

Where A is the number of cc. of 0.5 N alcoholic potassium hydroxide solution consumed in the saponification and B is the weight (in grams) of sample used.

Ester Value after Acetylation: 25 to 60.

Proceed as directed for the determination of total alcohols (See B) using approximately 2.5 grams of the acetylated oil for the subsequent saponification. Calculate the ester value after acetylation by the following formula:

$$\text{E.V.A.A.} = \frac{A \times 28.05}{B}$$

Where A is the number of cc. of 0.5 N alcoholic potassium hydroxide solution consumed in the saponification of the acetylated oil, and B is the weight (in grams) of the sample of acetylated oil used.

Ketone Content: Not less than 50%. calculated as thujone.

Proceed as directed for the determination of aldehydes and ketones. (See Determinations E.O.A. 1D) using approximately 1 gram of the oil accurately weighed. Calculate the ketone content, as thujone, by the following formula:

$$\text{Percentage of Thujone} = \frac{A \times 7.61}{B}$$

Where A is the difference in cc. of the 0.5 N hydrochloric acid required in titrating the blank and in titrating the determination, and B is the weight (in grams) of sample used.

Solubility in Alcohol: Soluble in 1 volume of 80% alcohol.

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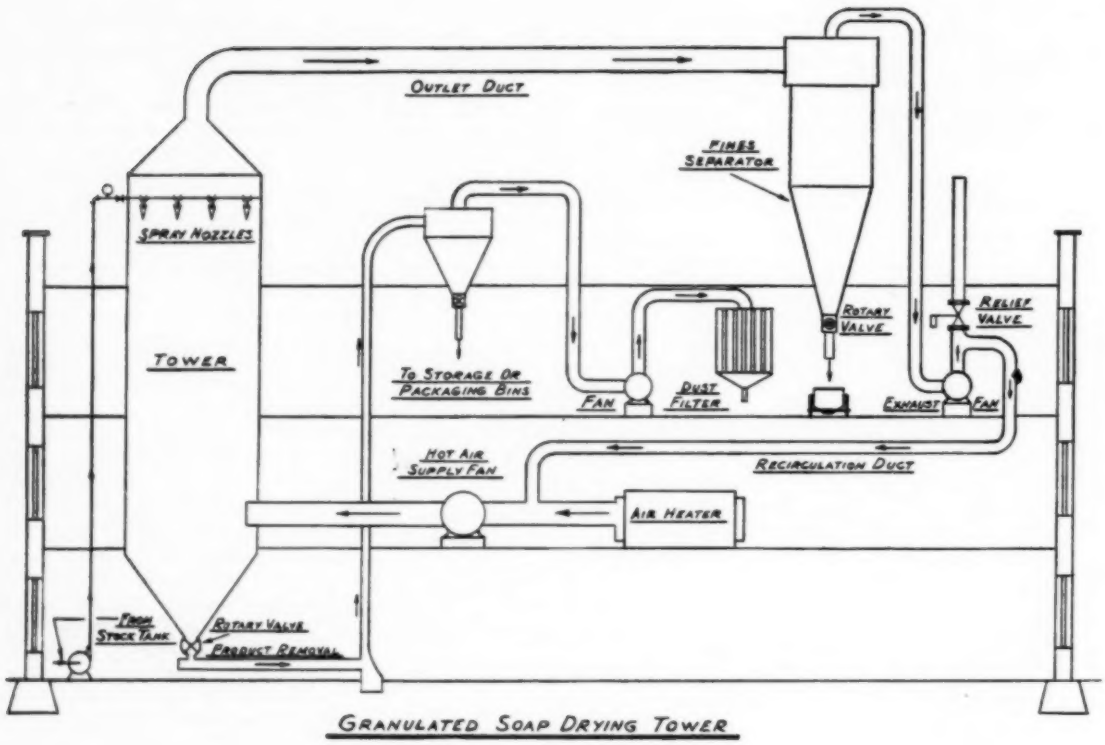
Engineers



Granulated Soap Drying Tower

DESIGN AND CONSTRUCTION OF COMPLETE PLANTS FOR TOILET SOAP AND LAUNDRY SOAP PRODUCTION, GRANULATED SOAP AND WASHING POWDER SYSTEMS, FAT HYDROLYSIS, FATTY ACID DISTILLATION PLANTS, GLYCERINE TREATING, EVAPORATION EQUIPMENT.

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Federal Specifications

General requirements of the U.S. Federal Specifications Board for soaps, cleaners, detergents, dishwashing compound, polishes, floor wax, insecticides, etc.

Powdered High-Titer Built Soap (P-S-563)

The soap covered by this specification shall be of one type as hereinafter specified: *Composition.*—The composition of the soap shall be as shown in Table I. *Form.*—The soap shall be a homogeneous, uniform mixture of soap and alkalies in powdered form. It shall be readily soluble. *Color.*—The soap shall have a light uniform color. *Odor.*—The odor shall not be objectionable in the soap as received, or in a hot water solution. The soap shall not leave an objectionable odor on the objects after using with a water solution of the soap and rinsing thoroughly with hot water. If desired, the odor of the material under the above conditions shall conform to the odor of the sample approved by the bureau concerned. The approved sample shall be kept in an airtight container for comparison with the sample submitted for inspection.

Table I. — Composition

	Maximum	*Minimum*
	Per Cent	
Moisture and matter volatile at 105°C.	16	
Free alkali, calculated as sodium hydroxide, NaOH	0.2	
Alkaline salts, calculated as sodium carbonate, Na_2CO_3		21 per cent
Matter insoluble in water	1.0	
Chloride (calculated as sodium chloride)	0.5	
Anhydrous soap		56 per cent
Titer of the mixed fatty acid prepared from the soap		39°C.
Residue retained on a No. 12 sieve	1.5	
Passing through a No. 140 sieve	18.0	
Rosin	None	
Unsaponifiable matter	1.0	
Starch	None	

Chip Soap (P-S-566a)

Chip soap shall be a soap in chip form made from soda and fats or fatty acids, without rosin, as free as possible from water and all substances other than true soap, of a light uniform color, free from disagreeable odor, and suitable for laundering and other washing, cleaning and scouring processes with soft water, when the presence of alkaline salts is not desirable.

Moisture and matter volatile at 105° C. shall not exceed 10 per cent. The sum of free alkali, total matter insoluble in alcohol, and sodium chloride shall not exceed 4 per cent. Free alkali, calculated as sodium hydroxide (NaOH), shall not exceed 0.2 per cent. Matter in-

ONLY the essential requirements of these government specifications have been extracted in our summary. Copies of the complete specifications, including details as to packaging, methods of analysis, etc., are available through the U. S. Federal Specifications Board. The specifications listed are the latest versions as of the date of compilation of this edition of the Blue Book. Readers are cautioned, however, that further changes are being made periodically, and that the latest amended versions of all specifications should be consulted in filling government orders.

soluble in water shall not exceed 1.0 per cent. Anhydrous soap shall be not less than 85 per cent. Titer of the mixed fatty acids prepared from the soap must be not less than 39° C. No rosin shall be present.

Cake Grit Soap (P-S-571a)

Cake grit soap shall be of the following types as specified: Type A—for fine work, such as glass and enamel; Type B—for scouring and scrubbing.

Type A—

Moisture and matter volatile at 105° ±2° C. shall not exceed 4 per cent. Alkali as alkaline salts (total alkalinity of matter insoluble in alcohol), calculated as sodium carbonate (Na_2CO_3), shall not exceed 1 per cent. Free alkali, calculated as sodium hydroxide (NaOH), shall not exceed 0.1 per cent. Insoluble siliceous material shall be not less than 88 per cent nor more than 93 per cent. The insoluble siliceous material shall consist of not less than 90 per cent of ground feldspar. All of the insoluble siliceous material shall pass through a No. 100 sieve, and the residue retained on a No. 200 sieve shall not exceed 5 per cent. Sugar, and foreign matter shall not be present. Anhydrous soda soap shall be within 1 per cent of the difference between 100 and the sum of the matter volatile at 105° ±2° C., insoluble siliceous material, and alkali as alkaline salts. The cakes shall be well compressed and of a satisfactory degree of friability, which shall not be materially affected or lessened after immersion in or contact with water. The material shall not scratch glass or enameled surfaces. The material shall be unscented and shall be of a light gray or white color.

Type B—

Moisture and matter volatile at 105° ±2° C. shall not exceed 5 per cent. Alkali as alkaline salts (total alkalinity of matter insoluble in alcohol), calculated as sodium carbonate (Na_2CO_3), shall not exceed 3 per cent. Free alkali, calculated as sodium hydroxide (NaOH), shall not exceed 0.1 per cent. Insoluble siliceous material shall not be less than 75 nor more than 85 per cent. The insoluble siliceous material shall be mainly quartz, and it all must pass through a No. 100 sieve. Sugar, and foreign matter shall not be present. Anhydrous soda soap shall be within 1 per cent of the difference between 100 and the sum of the matter volatile at 105° ±2° C., insoluble siliceous material, and alkali as alkaline salts. The cakes shall be well compressed and of a satisfactory degree of friability, which shall not be materially affected or lessened after immersion in or contact with water. The material shall be unscented and shall be of a light gray or white color.

Detail Requirements for Laundry Chip Soap

	Maximum Per Cent	*Minimum Per Cent*
Moisture and matter volatile at 105° C.	15.0	....
Sum of free alkali or free acid, total matter insoluble in alcohol, and sodium chloride	12.0	....
Free alkali, calculated as sodium hydroxide (NaOH)	.5	....
Free acid, calculated as oleic acid	.5	....
Matter insoluble in water	1.0	....
Chloride, calculated as sodium chloride (NaCl)	1.0	....
Rosin	20.0	....
Anhydrous soap	....	72.0

Hand Grit Soap (P-S-576a)

Hand-grit soap shall be a cake soap containing clean, finely divided insoluble siliceous matter, as free as possible from water, uncolored, mildly perfumed unless otherwise specified, and well compressed in firm, smooth cakes.

Matter volatile at 105° C. shall not exceed 25 per cent. Total alkalinity of matter insoluble in alcohol (alkaline salts), calculated as sodium carbonate (Na_2CO_3), shall not exceed 1 per cent. Free alkali, calculated as sodium hydroxide (NaOH), shall not exceed 0.1 per cent. Insoluble siliceous material shall be not less than 25 nor more than 35 per cent. The insoluble siliceous material shall not yield more than 2 per cent of residue retained on a No. 100 sieve and not more than 10 per cent of residue retained on a No. 200 sieve. Sugar, and foreign matter shall not be present. Rosin shall not exceed 5 per cent. Anhydrous soap shall be not less than 35 per cent. The percentage of moisture and volatile matter will be computed on the basis of the soap as received, but all other constituents will be calculated to the basis of material containing 25 per cent of matter volatile at 105° C. Unless otherwise specified, each cake shall weigh not less than 8 ounces nor more than 16 ounces.

Laundry Chip Soap (Rosin Type) (P-S-581)

Laundry chip soap shall be a well-made, uniformly mixed soap in chip form, made from soda and fats or fatty acids, with no excessive

Detail Requirements for Granulated Laundry Soap

	Maximum Per Cent	*Minimum Per Cent*
Moisture and matter volatile at 105° C.	10.0	....
Sum of free alkali or free acid, total matter insoluble in alcohol, and sodium chloride	14.0	....
Free alkali, calculated as sodium hydroxide (NaOH)	.5	....
Free acid, calculated as oleic acid	.5	....
Matter insoluble in water	1.0	....
Chloride, calculated as sodium chloride (NaCl)	1.0	....
Rosin	20.0	....
Anhydrous soap	....	75.0
Residue retained on a No. 12 sieve	2.0	....

proportion of rosin and a moderate amount of matter insoluble in alcohol, shall be of a uniform color, and shall be suitable for use with moderately hard water for general cleaning and laundry purposes. The odor shall not be objectionable in the soap as received or in a hot solution of the soap in water. The material shall not leave an objectionable odor on dishes or other objects after washing with a water solution of the soap and rinsing thoroughly with hot water. If desired, the odor of the material under the above conditions shall conform to the odor of a sample mutually agreed upon by buyer and seller.

The material shall conform to the detail requirements listed in the table on facing page.

Granulated Laundry Soap (Rosin Type) (P-S-583)

Laundry granulated soap shall be a well-made, uniformly mixed soap in granulated or powdered form, made from soda and fats or fatty acids, with no excessive proportion of rosin and a moderate amount of matter insoluble in alcohol, shall be of a uniform color, and shall be suitable for use with moderately hard water for general cleaning and laundry purposes. The odor shall not be objectionable in the soap as received or in a hot solution of the soap in water. The material shall not leave an objectionable odor on dishes or other objects after washing with a water solution of the soap and rinsing thoroughly with hot water. If desired, the odor of the material under the above conditions shall conform to the odor of a sample mutually agreed upon by buyer and seller. Detail requirements listed in table on facing page.

Ordinary Bar Laundry Soap (P-S-591a)

Ordinary laundry bar soap shall be a well-made, uniformly mixed laundry or common soap, made from soda and fats or fatty acids, with no excessive proportion of rosin and a moderate amount of matter insoluble in alcohol, and shall be suitable for use with moderately hard water for general cleaning and laundry purposes.

Odor shall not be objectionable in the soap as received or in a hot solution of the soap in water. The materials shall not leave an objectionable odor on dishes or other objects after washing with a water solution of the soap and rinsing thoroughly with hot water. If desired, the odor of the material under the above conditions shall conform to the odor of a sample mutually agreed upon by buyer and seller. The mutually agreed upon sample shall be kept in an air-tight, closed container for comparison with samples from deliveries.

Moisture and matter volatile at 105° C. shall not exceed 36 per cent. The sum of free alkali or free acid, total matter insoluble in alcohol and sodium chloride, shall be not less than 2 per cent nor more than 11.0 per cent. Free alkali, calculated as sodium hydroxide (NaOH), shall not exceed 0.5 per cent. Free acid, calculated as oleic acid, shall not exceed 0.5 per cent. Matter insoluble in water shall not exceed 1 per cent. Chloride calculated as sodium chloride (NaCl), shall not exceed 1.0 per cent. Rosin shall not exceed 25 per cent. Anhydrous soap shall be not less than 52 per cent. The percentage of moisture and volatile matter will be computed on the basis of the soap as received, but all other constituents will be calculated on the basis of an assumed moisture and volatile matter content of 36 per cent.

Powdered Laundry Soap (P-S-596a)

Powdered soap shall be a soap in powdered form made from soda and fats or fatty acids, without rosin, as free as possible from water and all substances other than true soap, of a light uniform color, free from disagreeable odor, and suitable for laundering and other washing, cleaning and scouring processes with soft water, when the presence of alkaline salts is not desirable.

Moisture and matter volatile at 105° C. shall not exceed 6 per cent. The sum of free alkali, total matter insoluble in alcohol, and sodium chloride shall not exceed 4 per cent. Free alkali, calculated as sodium hydroxide (NaOH), shall not exceed 0.2 per cent. Matter insoluble in water shall not exceed 1.0 per cent. Anhydrous soap shall be not less than 89 per cent. Titer of the mixed fatty acids prepared from the soap shall be not less than 39° C. Residue retained on a No. 12 sieve shall not exceed 1.5 per cent. Rosin, none. The percentage of moisture and volatile matter will be computed on the basis of the soap as received, but all other constituents will be calculated on the basis of material containing 6 per cent of volatile matter.

Liquid and Paste Soap for Automobile, Floor and General Cleaning (P-S-598)

Soap covered by this specification shall be of two types. Type I—Liquid. Type II—Paste. Type I shall be a uniform liquid soap made from whole neutral vegetable oils and potash or distilled fatty acids. Type II shall be a uniform gel or paste soap made solely from whole neutral vegetable oils and potash.

Type I shall be soluble in soft water and when diluted with water shall act as a cleaner. The flash point shall be above its boiling point. It shall not contain any solvents or oils that will damage floor surfaces. The odor shall not be objectionable in the soap as received or in a hot solution of the soap in water. The material shall not leave an objectionable odor on surfaces after washing with a water solution of the soap and rinsing thoroughly with plain water.

Type II. Paste soap.—The material shall be a uniform translucent, firm gel or paste of a yellowish-white to brownish-yellow color. The odor shall not be objectionable in the soap as received or in a hot solution of the soap in water. The material shall not leave an objectionable odor on surfaces after washing

with a water solution of the soap and rinsing thoroughly with plain water. *Moisture (by distillation method, using toluol instead of xylol)* —shall not exceed 55 per cent. Deliveries which yield more than 55 per cent of moisture shall be rejected without further test. The soap shall dissolve readily to give a 0.15- to 0.2 per cent solution, using distilled water at 15.5 to 20° C. (60° to 68° F.). The solution so prepared shall yield a good suds. A solution of the soap in soft water shall act as a cleaner and shall not damage surfaces on which it is used. When specified, each bidder shall submit with his proposal a 1-quart sample of the soap that he proposes to furnish, packed in a screw-top glass jar, to show odor, color, and consistency. The sample so furnished shall be kept for comparison with samples from deliveries. The material of each type shall not become rancid or otherwise deteriorate when kept in a closed container.

The material shall conform to the detail requirements for the type indicated as listed in the accompanying table. Percentages are by weight.

Computation (type II only). —The percentage of moisture shall be computed and reported by the testing laboratory on the soap as received. The percentages of all other constituents shall be calculated and reported on an assumed moisture content of 50 per cent.

Soap; Low-Titer (P-S-600a)

Low-titer soap shall be of the following types and classes:

Type I—Bar form
Type II—Other forms
Class A—Granular
Class B—Powdered
Class C—Flake

The soap shall have a uniform color. The odor shall not be objectionable in the soap as received or in a solution of the soap in water at 125° to 130° F. The material shall not leave an objectionable odor on objects after washing with a water solution of the soap and rinsing thoroughly with hot water. If desired, the odor of the material under the above conditions shall conform to the odor of a sample mutually agreed upon by buyer and seller. When specified, each bidder shall submit with his proposal a sample of the material that he proposes to furnish, to show color, odor, and condition.

Low-titer soap shall conform to detail requirements as listed in the table below.

Detail Requirements (P-S-598)

	Type I		*Type II*	
	Min.	*Max.*	*Min.*	*Max.*
Moisture (toluol distillation method) (per cent)	..	..	..	55
Total matter insoluble in alcohol (per cent)	..	0.5	..	1.0
Free alkali, calculated as potassium hydroxide (KOH) (per cent)	..	.05	..	.1
Free acid, calculated as oleic acid (per cent)	..	.1	..	.2
Alkaline salts, calculated as potassium carbonate (K_2CO_3) (per cent)	..	.1	..	.2
Matter insoluble in distilled water (per cent)	..	.1	..	.2
Chloride, calculated as potassium chloride (KCL) (per cent)	..	.3	..	.5
Unsaponified and unsaponifiable matter (per cent)	..	.4	..	.8
Anhydrous soap, calculated as potash soap (per cent)	20	..	43	..
Total sodium compounds, calculated as NA_2O (per cent)	..	.2	..	.5
Glycerol (per cent)	..	1.8	..	4.0
Iodine number (WIJS) of mixed fatty acids derived from the soap	80	150	80	150
Acid number of mixed fatty acids derived from the soap	195	205	195	205
Rosin	..	3	..	6
Sugar	..	None	..	None

Potash Linseed Oil Soap, Liquid and Paste, for Floor and General Cleaning (P-S-603)

Potash-linseed-oil soap sha' be of two types. Type I—Liquid. Type II—Paste. Type I shall be a uniform liquid soap made solely from whole neutral raw linseed oil and potash. Type II shall be a uniform, translucent, firm gel or paste soap made solely from whole neutral raw linseed oil and potash.

Type I shall be soluble in soft water and when diluted with water shall act as a cleaner. The flash point shall be above its boiling point. It shall not contain any solvents or oils that will damage floor surfaces. The odor shall not be objectionable

Detail Requirements for Low Titer Soap

	Type I		*Type II*	
	Max.	*Min.*	*Max.*	*Min.*
Matter volatile at 105° ± 2° C. (per cent)	35.0	..	7.0	..
Sum of free alkali or free acid, total matter insoluble in alcohol, and sodium chloride (per cent)	2.0	..	9.0	..
Water soluble sodium silicate (calculated as in Spec P-S-536a) (per cent)	0.4			
Free alkali, calculated as sodium hydroxide (NaOH) (per cent)	0.1	..	0.4	..
Free acid, calculated as oleic acid (per cent)	0.1	..	None	..
Matter insoluble in water (per cent)	.5	..	1.5	..
Rosin	None	..	None	..
Sugar	None	..	None	..
Copper (parts per million)	10.0			
Unsaponified saponifiable matter (per ent)	1.0	..	1.0	..
Anhydrous soap (per cent)	..	64.0	..	81.0
Titer of the mixed fatty acids prepared from the soap	28° C	..	22° C	..
Iodine number (Wijs) of the mixed fatty acids prepared from the soap	90.0	74.0	90.0	74.0
Acid number of the mixed fatty acids prepared from the soap	205.0	180.0	205.0	180.0
Residue retained on a No. 12 sieve (class B only) (per cent)	..	..	1.5	..

in the soap as received or in a hot solution of the soap in water. The material shall not leave an objectionable odor on surfaces after washing with a water solution of the soap and rinsing thoroughly with plain water.

Type II—Paste soap shall be a uniform translucent firm gel or paste soap of a yellowish-white to greenish-brown color. The odor shall not be objectionable in the soap as received or in a hot solution of the soap in water. The material shall not leave an objectionable odor on surfaces after washing with a water solution of the soap and rinsing thoroughly with plain water. *Moisture (by distillation method, using toluol instead of Xylol)* shall not exceed 55 per cent. Deliveries which yield more than 55 per cent of moisture shall be rejected without further test. The soap shall dissolve readily to give a 0.15- to 0.2-per cent solution, using distilled water at 15.5° to 20° C. (60° to 68° F.). The solution so prepared shall yield a good suds. A solution of the soap in soft water shall act as a cleaner and shall not damage floor surfaces. When specified, each bidder shall submit with his proposal a 1-quart sample of the soap that he proposes to furnish, packed in a screw-top glass jar, to show odor, color, and consistency. The sample so furnished shall be kept for comparison with samples from deliveries. The material of each type shall not become rancid or otherwise deteriorate when kept in a closed container.

The material shall conform to the detail requirements for the type indicated as listed in the accompanying table. Percentages are by weight.

Computation (type II only).—The percentage of moisture shall be computed and reported by the testing laboratory on the soap as received. The percentages of all other constituents shall be calculated and reported on an assumed moisture content of 50 per cent.

Soap Powder (P-S-606a)

Soap powder shall be a uniform mixture of soap and sodium carbonate, and/or other alkaline salts in powdered form. It shall be readily soluble in tepid water, shall contain no free caustic alkali or inert fillers, and shall be free from objectionable odor.

Anhydrous soap shall be not less than 15 per cent. Alkaline salts, calculated as sodium carbonate (Na_2CO_3) shall be not less than 30 per cent. The sum of anhydrous soap and alkaline salts, calculated as sodium carbonate shall be not less than 55 per cent.

Detail Requirements for Potash Linseed Soap

	Type I Min.	*Type I* Max.	*Type II* Min.	*Type II* Max.
Moisture (toluol distillation method) (per cent)	..	..	..	55
Total matter insoluble in alcohol (per cent)	..	0.5	..	1.0
Free alkali, calculated as potassium hydrate (KOH) (per cent)	..	.05	..	.1
Free acid, calculated as oleic acid (per cent)	..	.1	..	.2
Alkaline salts, calculated as potassium carbonate (K_2CO_3) (per cent)	..	.1	..	.2
Matter insoluble in distilled water (per cent)	..	.1	..	.2
Chloride, calculated as potassium chloride (KCL) (per cent)	..	.3	..	.5
Unsaponified and unsaponifiable matter (per cent)		.4	..	1.0
Anhydrous soap, calculated as potash soap (per cent)	20	..	43	..
Total sodium compounds, calculated as NA_2O (per cent)	..	.2	..	.5
Glycerol (per cent)	1.8	..	4	..
Iodine number (WISJ) of mixed fatty acids derived from the soap	175	..	175	..
Acid number of mixed fatty acids derived from the soap	190	205	190	205
Sugar	..	None	..	None

Salt Water Soap (P-S-611a)

Salt-water soap shall be a soap well made from pure coconut oil fatty acids, pure palm kernel oil fatty acids, or a mixture thereof, and soda. It shall be entirely soluble in both sea water and fresh water and shall make a suitable lather. The soap shall be light in color and free from objectionable odor. The material shall conform to the detail requirements listed in the table below.

The percentage of moisture and volatile matter shall be computed, and reported by the testing laboratory, on the soap as received. The percentages of all other constituents shall be calculated and reported on an assumed moisture and volatile matter content of 55%.

Detail Requirements for Salt Water Soap

		Maximum	*Minimum*
Moisture and matter volatile at 105°C	per cent	55.0	..
Total matter insoluble in alcohol	per cent	3.0	2.0
Free alkali, calculated as sodium hydroxide (NaOH)	per cent	.5	..
Chloride, calculated as sodium chloride (NaCl)	per cent	3.0	2.5
Anhydrous soap	per cent	..	40.0
Matter insoluble in water	per cent	.5	..
Acid number of the mixed fatty acids prepared from the soap		..	240
Sugar, and foreign matter		None	..
Rosin		None	..

White Floating Toilet Soap (P-S-616a)

Floating toilet soap shall be a cake soap without objectionable odor, thoroughly saponified, and so prepared as to float on water.

Moisture and matter volatile at 105° C. shall not exceed 34 per cent. The sum of free alkali, total matter insoluble in alcohol, and sodium chloride shall not exceed 2.0 per cent. Free alkali, calculated as sodium hydroxide (NaOH), shall not exceed 0.1 per cent. Chloride,

calculated as sodium chloride (NaCl), shall not exceed 1 per cent. Matter insoluble in water shall not exceed 0.2 per cent. Anhydrous soap shall be not less than 62 per cent. Acid number of the mixed fatty acids prepared from the soap, shall be not less than 212. Rosin, sugar and foreign matter shall not be present. The percentage of moisture and volatile matter will be computed on the basis of the soap as received, but all other constituents will be calculated on an assumed moisture and volatile matter content of 34 per cent.

Liquid Toilet Soap (P-S-618a)

Liquid toilet soap shall be a clear solution of pure vegetable oil potash (or potash and soda) soap with or without glycerol or alcohol, suitably perfumed, and free from all foreign matter. It shall quickly form a satisfactory lather and have no injurious effect and leave no objectionable odor on the skin.

The odor shall not be objectionable in the soap as received or in a hot solution of the soap in water. The material shall not leave any objectionable odor on the skin or other surfaces after washing with a water solution of the soap and rinsing thoroughly with plain water. Unless otherwise specified each bidder shall submit with his proposal a one-quart sample, placed in a screw-top glass jar, to show odor, color, and consistency. The sample so furnished shall be kept for comparison with samples from deliveries.

The material shall be a clear solution, free from objectionable odor, other than from coconut oil, and shall form a satisfactory lather. Total anhydrous soap shall be not less than the equivalent of 15 per cent potash soap. Total matter insoluble in alcohol shall not exceed 0.5 per cent. Free alkali calculated as potassium hydroxide (KOH) shall not exceed 0.05 per cent. Chloride calculated as potassium chloride (KCl) shall not exceed 0.3 per cent. More than traces of sulphates and sugar shall not be present. All constituents shall be calculated on the basis of the original sample.

Milled Toilet Soap (P-S-621a)

Milled toilet soap shall be a high grade, milled cake soap as free as possible from water, either colored or uncolored, and mildly perfumed unless otherwise specified, thoroughly saponified, well compressed in firm, smooth cakes of a size and shape specified in the contract. It should lather freely when used with cold, soft water.

Moisture and matter volatile at 105° C. shall not exceed 15 per cent. The sum of free alkali, total matter insoluble in alcohol, and sodium chloride shall not exceed 1.7 per cent. Free alkali, calculated as sodium hydroxide (NaOH), shall not exceed 0.1 per cent. Matter insoluble in water shall not exceed 0.4 per cent. Unsaponified saponifiable matter shall not exceed 0.3 per cent. Anhydrous soap shall be not less than 83 per cent. Sugar and foreign matter shall not be present. Rosin, none. The percentage of moisture and matter volatile will be computed on the basis of the soap as received, but all other constituents will be calculated on the basis of material containing 15 per cent of volatile matter.

Powdered Toilet Soap (for (Dispensers) (P-S-626a)

Powdered toilet soap for use in dispensers shall be a thoroughly saponified soap in powdered form, made from soda and fats; shall be uncolored and mildly perfumed, unless otherwise specified; shall be a uniform, free-flowing, noncaking powder; and shall lather freely when used with cold soft water.

The material shall be a uniform powder and shall be freeflowing and noncaking when used in a dispenser conforming to type III or IV of Federal Specification FF-D-396. It shall lather freely when used with soft water at room temperatures. Shall be mildly perfumed, unless otherwise specified. If desired, shall conform to the odor of a sample mutually agreed upon by buyer and seller. The mutually agreed upon sample shall be kept in an airtight, closed container for comparison with samples from deliveries.

Shall be uncolored, unless otherwise specified. Matter volatile at 105°±2° C. shall not exceed 6 per cent. The sum of free alkali, total matter insoluble in alcohol, and sodium chloride shall not exceed 2.0 per cent. Free alkali, calculated as sodium hydroxide (NaOH), shall not exceed 0.1 per cent. Matter insoluble in water shall not exceed 0.2 per cent. Anhydrous soda soap shall be not less than 91 per cent. Rosin, sugar, and foreign matter shall not be present. The material shall meet the following fineness requirements:

Retained on—	*Minimum Per Cent*	*Maximum Per Cent*
No. 12 sieve.....	—	1.5
No. 45 sieve.....	50	—
No. 100 sieve.....	90	—

Toilet Soap-Borax Compound (for Dispensers) (P-S-628)

Soap and borax compound for use in dispensers shall be a uniform mixture of a thoroughly saponified soap and borax ($Na_2B_4O_7 \cdot 10\ H_2O$); shall be free from added coloring matter and mildly perfumed, unless otherwise specified; shall be a uniform free-flowing, noncaking powder, when used in a dispenser conforming to Type III or IV of Fed. Spec. FF-D-396. It shall lather freely when used with soft water at room temperature. Anhydrous soda soap shall be not less than 23 per cent and not more than 27 per cent. Borax, calculated as $Na_2B_4O_7 \cdot 10\ H_2O$, shall be not less than 72 per cent and not more than 77 per cent. The pH of a 1 per cent solution by weight of the material in distilled water shall be not less than 9.0 and not more than 10.2 at 25° C., using a glass electrode. Matter insoluble in water shall not exceed 0.2 per cent. Sugar, and foreign matter shall not be present. Rosin none. The material shall meet the following fineness requirements:

Retained on—	*Minimum Per Cent*	*Maximum Per Cent*
No. 12 sieve.....	—	0
No. 45 sieve.....	5	—
No. 100 sieve.....	45	—

Caustic Soda for Cleaning (P-S-631a)

Caustic soda shall be of but one grade. It shall be furnished in airtight containers (13-ounce cans or drums) in flake, ground, or lump form, as specified in the invitation for bids. It shall conform to the following detail requirements:

Sodium hydroxide (NaOH) shall be not less than 95 per cent.

Carbonate, calculated as sodium carbonate (Na_2CO_3), shall not be more than 2 per cent.

Laundry Soda (Washing Soda) (P-S-641a)

Laundry soda shall be a white uniform powder composed of sodium carbonate and sodium bicarbonate. It shall conform to the following detail requirements:

	Maximum Per Cent	*Minimum Per Cent*
Total alkalinity, calculated as Na_2O	43	39
Sodium bicarbonate ($NaHCO_3$)	50	35
Sodium carbonate (Na_2CO_3)	50	35
Matter insoluble in water	.1	—

Cleaner Containing Synthetic Detergent for Painted Surfaces (P-C-431)

Cleaner for painted surfaces shall be on one grade and of the following types:

Type 1.—Powder

Type II.—Flake

Type III.—Liquid

Type IV.—Paste

The cleaner shall be a uniform, homogeneous product, free from any objectionable odor, and consisting essentially of synthetic organic detergents. It shall contain no abrasives or fatty acid soaps and shall not be irritating to the skin.

General requirements.—Each bidder shall submit a sample of the cleaner he will deliver for inspection and testing. The cleaner shall be satisfactory for use in cleaning operations with soft, hard or sea water. The manufacturer shall supply with each package a complete set of clear, concise instructions for the use of the cleaner. The cleaner shall be stable and not lose effectiveness or otherwise deteriorate when stored in closed containers at normal temperatures. pH value of 1.0 per cent distilled water solution (by weight) of the cleaner shall be not less than 5.5 nor more than 10.0. The cleaner shall be free-rinsing. A 0.2 per cent (by weight) solution of the cleaner shall not cause greater than one-half loss in specular gloss of painted surfaces caused by a 0.2 per cent solution of trisodium phosphate. A solution of 50 grams of cleaner per liter, in distilled or sea water, shall exhibit a cleaning efficiency of not less than 80 per cent.

Cleaning Compound (P-C-565) Soap—Abrasive Type for painted surfaces

The product is to be without objectionable odor, and not harmful to the hands. The seller must label each container with directions for use. The product must be capable of being applied either with a damp cloth or sponge. It is to be a uniform soft paste, meeting the following requirements.

Matter volatile at 105°C. shall not exceed 65% by weight. It shall contain not more than 0.1% by weight of free alkali calculated as NaOH. It shall contain not more than 0.5% by weight free acid calculated as oleic acid. Alkaline salts calculated as Na_2CO_3 shall not exceed 5% by weight. Insoluble siliceous matter shall not be less than 25% nor more than 50% by weight. All of the insoluble siliceous matter shall pass through a No. 80 sieve; and not more than 15% shall be retained on a No. 200 sieve. Anhydrous soap shall be not less than 3.5% by weight.

A special test is provided for determination of abrasive properties. A thin film of the compound is spread over a clear microscopic slide. Another slide is placed over the film and the two slides pressed together, using a slight pressure, and rubbing one slide over the other with a rotary motion. The slides when wiped clean of the compound shall not be scratched.

Grease-Cleaning Compound Solvent-Emulsion Type (P-C-576)

Grease-cleaning compound shall be furnished in two types, Type I, non-phenolic, and Type II, phenolic, The compound shall be uniform liquid and shall be suitable for the purpose intended.

Type I, nonphenolic

Flash point shall be not less than 200° F. (open cup). The compound shall have a neutralization number of not more than 8 (mg. of KOH to neutralize 1 gm. of compound). The compound shall have no free alkali. The pour point shall be not more than 35°F. The loss in weight shall be not more than 10 per cent after a 24-hour period. Shall be free from phenols. Physical and performance tests covering stability of emulsion, solubility in kerosene and in water, etc., are also provided.

Type II, phenolic

As above except that the material is to contain not less than 15 per cent and not more than 25 per cent phenols by volume, and must pass a phenol (C_6H_5OH) limitation test.

Mechanics' Paste, Powder And Hand Detergents (P-D-221a)

Detergents for mechanics' use shall be of three types: Type I —hand grit paste detergent; Type II — hand scouring powder with mineral abrasive and Type III — hand scouring powder with vegetable abrasive. Type I shall be a uniform mixture of detergents and mineral abrasives in paste form. Type II shall be a uniform mixture of detergents and mineral abrasives in powder form. Type III shall be a uniform mixture in powder form of thoroughly saponified soap and/or active salt-free synthetic detergents,

and pine oil. The detergent shall not contain any mineral abrasives such as lava, pumice, sand, quartz, etc.

Detergents for mechanics' use shall be satisfactory for removing oil, grease, paint, printing inks and other occupational soil from the hands without harmful effect on the skin. They shall lather freely when used with fresh water at room temperature. Detergents in powder form shall be free-flowing and non-caking when used in dispensers conforming to the requirements of Federal Specification FF-D-396 for types III and IV.

The odor shall not be objectionable. If desired, it shall conform to the odor of a sample mutually agreed upon by buyer and seller. The mutually agreed upon sample shall be kept in an airtight, closed container for comparison with samples from deliveries.

For Type I detergent, the percentage of matter volatile at 105° ±2° C. will be computed on the basis of the grit paste detergent as received, but with all other constituents will be calculated on the basis of material containing 50.0 per cent of matter volatile at 105° ±2° C. Types II and III shall have all constituents reported on the basis of the sample as received.

Table I.—Detail Requirements for Hand Detergents

	Type I		*Type II*		*Type III*	
	Min.	*Max.*	*Min.*	*Max.*	*Min.*	*Max.*
Matter volatile at 105° ± 2° C.	....	55.0	....	5.0	....	10.0
Alkaline salts (calculated as sodium carbonate)	....	3.0	2.0	5.0	....	0.2
Free alkali (calculated as sodium hydroxide)	....	0.1	....	0.1	....	0.1
Free acid (calculated as oleic acid)	....	0.5	....	0.5	....	0.5
Anhydrous soda soap and/or active salt-free synthetic detergents	8.0	....	17.0	....	35.0	....
Matter insoluble in water (siliceous matter)	25.0	50.0	60.0	76.0	....	none
Fineness of insoluble siliceous matter; Percent retained on:						
No. 40 sieve	....	none	....	none	....	....
No. 60 sieve	10.0	20.0	....	5.0	....	....
No. 80 sieve	30.0	45.0	....	....	....	....
No. 100 sieve	35.0	55.0	....	30.0	....	....
No. 200 sieve	60.0	....	....	60.0	....	....
Matter insoluble in water (cornmeal)	....	....	....	....	40.0	62.0
Fineness of finished detergent; Percent retained on:						
No. 20 sieve	....	....	....	....	....	none
No. 45 sieve	....	....	....	....	50.0	....
No. 100 sieve	....	....	....	....	90.0	....
Rosin	....	....	....	5.0	....	5.0
Sugar	....	none	....	none	....	none
Volatile hydrocarbons (pine oil)	....	....	....	....	3.0	5.0

Special Detergents (P-D-236)

Detergents for manual cleaning of aluminumware shall be of the following classes:

Class A. Non - abrasive cleaner.

Class B. Abrasive cleaner.

The material used in Class A non-abrasive cleaner shall be suitable for any type of manual washing where abrasiveness is not desired, and shall be substantially uniform in appearance throughout. It shall be free from objectionable odor, and shall dissolve readily in tepid water. Cleaner may be supplied in either powder, granule or chip form provided it conforms to the detailed requirements.

The material used in Class B abrasive cleaner shall be suitable for any uses requiring a manual cleaner where soil adheres too tenaciously for non-abrasive cleaners. It may be supplied in the form of a solid, a paste, or a combination of any two of the above. Combinations of metal wools and soaps may be supplied. The cleaner shall be free from objectionable odor and from poisonous or irritant chemicals.

Each bidder shall submit with his proposal a sample of the material that he proposes to furnish. Each sample shall be labeled to show the amount recommended for softening 10 gallons of water containing 10 grains (171 p.p.m.) of hardness, calculated as $CaCO_3$, and may be used by the inspector or purchasing officer in the recommended proportions for determining the performance or cleaning ability of the material.

Samples from deliveries shall be subjected to similar tests. If specified by the purchasing officer, the material, when used in the proportions recommended by the bidder, shall be at least equal in cleaning ability to a standard sample furnished, or indicated, by the purchasing officer.

Class A. Non-Abrasive Cleaner shall conform to the following detail requirements:

Turbidity—The turbidity of the cleaner solution shall conform to the test described in paragraph F-2b (2). (See complete Specification.) *Corrosion*—When tested by the method described in paragraph F-2f (2), the cleaner solution shall be without visible action on bare or anodic oxide-coated aluminum alloy. *Water Softening Capacity* — A suds which is stable for not less than 5 minutes shall be formed when the material is tested as described in paragraph F-2e. *Hydrogen Ion Content*—The pH of a 1 per cent solution by weight of the cleaner in distilled water shall not exceed 10.5 when measured as indicated in paragraph F-2h. *Cleaning Ability*—The material shall clean satisfactorily when tested as indicated in paragraph F-2a. *Relative Cost*—The relative cost of the

cleaner shall be determined from the product of the delivered price per pound of the cleaner and the number of pounds of the cleaner required to treat 1000 gallons of water containing 10 grains (171 p.p.m.) per gallon of hardness, calculated as $CaCO_3$. The amount of cleaner used in this computation shall be that required to give the concentration used in paragraphs F-2b (2) and F-2e of this specification.

Class B. Abrasive Cleaner shall conform to the following detail requirements: *Abrasion*—When tested by the method described in paragraph F-2i (See complete Specification) the cleaner shall produce no undesirable scratching. *Corrosion*—When tested by the method described in paragraph F-2f (3), the cleaner shall be without visible action on bare or anodic oxide-coated aluminum alloy. *Rinsibility* — When tested by the method described in paragraph F-2j, the cleaner shall be removed completely from a glass plate. *Cleaning Ability* — The material shall clean satisfactorily when tested as indicated in paragraph F-2a.

Sweeping Compound

(P-S-863)

Sweeping compound shall consist of a uniform mixture of the materials as specified for each type and shall be artificially colored or uncolored as specified by the purchaser. If desired, shall conform to the color of a sample mutually agreed upon by buyer and seller. The material shall not stain flooring surfaces on which it is used.

Type I. — Sawdust- Sand-Mineral Oil.

Odor shall not be objectionable. If desired shall conform to the odor of a sample mutually agreed upon by buyer and seller. The material shall not give off flammable vapors when tested according to paragraph F-2b. Matter volatile at 105-110° C. shall be not more than 10 per cent by weight. Refined mineral oil (such as paraffin oil) shall be not less than 15 per cent and not more than 20 per cent by weight. The acid number (milligrams of KOH per gram of sample) of the extracted oils shall not exceed 17. The saponification number (milligrams of KOH per gram of sample) of the extracted oils shall not exceed 20. Clean, fine, feldspar sand shall be not less than 35 per cent and not more than 50 per cent by weight. Not more than 1 per cent by weight of sand (based on sand content) shall be retained on a No. 20 seive when tested according to paragraph F-2k. The remainder shall be finely ground sawdust. Not more than 1 per cent by weight of sawdust (based on sawdust content) shall be retained on a No. 8 seive when tested according to paragraph F-2k.

Type II — Sawdust-Sand-Water wax emulsion.

Odor shall not be objectionable. If desired shall conform to the odor of a sample mutually agreed upon by buyer and seller. The material shall not give off flammable vapors when tested according to paragraph F-2b. Matter volatile at 105-110° C. shall be not more than 12 per cent by weight.

Clean, fine, feldspar sand shall be not less than 60 per cent and not more than 70 per cent by weight. Not more than 1 per cent by weight of sand (based on sand content) shall be retained on a No. 20 sieve when tested according to paragraph F-2k. Finely ground sawdust shall be not less than 5 per cent and not more than 10 per cent by weight. Not more than 1 per cent by weight of sawdust (based on sawdust content) shall be retained on a No. 8 sieve when tested according to paragraph F-2k. The remainder shall be waxes and emulsifying agents.

Liquid Automobile Polish

(P-P-546)

Shall be suitable for use on lacquer, baked enamel and synthetic enamel finishes. Shall have no objectionable odor. Shall be a stable aqueous emulsion containing a suitable abrasive in suspension. The polish shall be a free-flowing fluid that can readily be applied with a cotton cloth and shall spread easily. Non-volatile matter, total solids, shall be not less than 25 per cent by weight. Ash content, based on non-volatile, shall be not less than 35 per cent nor more than 50 per cent by weight. No free caustic alkali. Neutralization number shall be not more than 5. All of the material shall pass through a No. 200 sieve, and not less than 95 per cent, based on ash content, shall pass through a No. 325 sieve. Volatile matter shall be essentially water. Physical and performance tests are also specified.

Liquid Furniture Polish

(P-P-552)

The polish shall be free from abrasives and suitable for use on finishes on wood and metal furniture. It shall have no objectionable odor. It shall be a stable colloidal emulsion of oil in water. It shall be a free-flowing fluid that can readily be applied with a cotton cloth and easily spread. Non-volatile matter shall be not less than 40 per cent by weight, and shall be essentially a well-refined petroleum oil. Ash content, based on non-volatile matter, shall be not more than 1 per cent by weight. Volatile matter shall be essentially water. No free caustic alkali shall be present. The saponification number shall be not more than 30. Physical and performance tests are also specified.

Metal Polish (P-P-556a)

Metal polish shall be of the following types:

Type I. Powder.

Type II. Liquid

Type III. Paste.

Metal polish of each type shall be of but one grade. It shall be a product, with or without a finely divided abrasive, suitable for the removal of tarnish from brass, nickel, copper, and other metals and capable of producing a luster thereon.

All types of metal polish shall have good tarnish removing properties, good luster-producing properties, shall give good protection to

the polished surface against tarnishing influences, and shall be so constituted and prepared that, by reason of application and polishing, they—

(1) Shall not scratch metals.

(2) Shall not leave the metal discolored or caked with abrasive material.

(3) Shall not be detrimental in any manner to metals.

(4) Shall not show any unnecessary caking of type I or III polish in the containers. The abrasive material in liquid (Type II) polish, shall show no caking in the container, which cannot be readily put into suspension by thoroughly shaking the containers. The abrasive material shall be of such particle size that 100 per cent will pass through a No. 200 sieve.

Metal polish shall be free from acids, cyanide of potassium or other cyanides, grit, or other ingredients having detrimental effects on metals. Shall clean quickly, leaving a bright polished surface, with a full luster for the material being polished. When so specified the tarnish-removing and luster-producing properties shall be equal in quality to those of a standard sample furnished or approved by the purchaser. The polished surface shall remain free from corrosion or discoloration for a period of at least 24 hours.

Polish shall have good keeping qualities and be guaranteed for 1 year from the date of actual receipt at point of delivery. During the guaranty period the successful bidder shall replace without cost any metal polish which through deterioration, evaporation, caking in the container, or other causes, becomes unfit for use. Replacement metal polish shall also be guaranteed for 1 year from date of receipt. The metal polish will be stored in original unopened shipping containers, not subjected to freezing temperature or to excessive artificial heat. The amount of volatile matter, at 105° to 107° C., in either type II or III polish, shall not exceed 70 per cent by weight, of the polish. The flammability of the liquid contents of types II and III polishes shall not be not less than 39° C.

Silver Polish (P-P-571b)

Silver polish shall be of the following types:

Type I. Liquid.

Type II. Paste.

Type III. Powder.

Silver polish shall be of but one grade, and shall consist solely of finely ground diatomaceous or infusorial earth, prepared as a powder (Type III) or suitably compounded with a neutral soap, to produce a liquid (Type I) or paste (Type II).

All types of silver polish shall have—

(a) Good tarnish-removing properties.

(b) Good luster-producing properties and shall be so constituted and prepared that by reason of application and polishing, they—

(1) Shall not scratch silverware.

(2) Shall not leave silver discolored.

(3) Shall not leave any residue (which will cause discoloration) not removable by washing in warm soapy water.

(4) Shall not show any unnecessary caking of Type II or III polish in the containers. The abrasive material in liquid (Type I) polish, shall show no caking in the container which cannot be readily put into suspension by thoroughly shaking the containers.

The diatomaceous or infusorial earth in all types of silver polish shall be of such particle size that 100 per cent will pass through a No. 200 sieve.

Silver polish shall be free from acids or cyanides. Shall clean quickly leaving a bright polished surface, with a full luster for the material being polished. It shall have good keeping qualities and be guaranteed for 1 year from the date of actual receipt at point of delivery. During the guaranty period the successful bidder shall replace, without cost, any silver polish which through deterioration, evaporation, caking in the container or other causes, becomes unfit for use. Replacement silver polish shall also be guaranteed for 1 year from date of receipt. The silver polish will be stored in original unopened shipping containers not subjected to freezing temperature or to excessive artificial heat. The amount of volatile matter, at 105° to 107° C., in either Type I or II polish, shall not exceed 70 per cent by weight, of the polish. The flammability of the liquid contents of Types I and II polishes shall be not less than 39° C.

Stove Polish (P-P-576)

Stove polish shall produce a deep, lustrous black color when applied as directed by the manufacturer. It shall produce no odors upon burning and shall produce a durable coating that will not readily be burned off.

Type I.—Polish, stove, liquid, shall be of such consistency that the addition of a fluid will not be necessary in order to make it free-flowing. The vehicle of the polish shall be a non-inflammable liquid.

Type II. — Polish, stove, paste, shall be non-inflammable and shall be of such consistency that it can be readily applied.

Type III. — Polish, stove, powder, shall readily form a paste with water, and shall be non-inflammable.

Type IV. — Polish, stove, cake, shall readily disintegrate in water and form a paste and shall be non-inflammable.

Scouring Powder for Floors (P-P-591a)

Scouring powder for floors shall be of the following types, as specified: Type I—for fine marble floors; Type II—for tile or ceramic and terrazzo floors; Type III—soap scouring compound.

Type I—(For fine marble floors).

Matter volatile at 105° ±2° C. shall not exceed 10 per cent. The sum of sodium carbonate (Na_2CO_3) and anhydrous soap and/or active anhydrous salt-free synthetic

detergent shall not exceed 7 per cent nor be less than 2 per cent. Free alkali, calculated as sodium hydroxide (NaOH) shall not exceed 0.1 per cent. Insoluble siliceous material shall be not less than 85 per cent nor more than 95 per cent. All of the insoluble siliceous material shall pass through a No. 100 sieve, and the residue retained on a No. 200 sieve shall not exceed 5 per cent. The material shall not scratch nor discolor marble.

Type II—(For tile or ceramic and terrazzo floors).

Matter volatile at 105° ±2° C. shall not exceed 10 per cent. The sum of sodium carbonate (Na_2CO_3) and anhydrous soda soap and/or active anhydrous, salt-free synthetic detergent shall not be less than 2 per cent. Free alkali, calculated as sodium hydroxide (NaOH), shall not exceed 0.1 per cent. Insoluble siliceous material shall be not less than 80 per cent nor more than 95 per cent. The insoluble siliceous material shall not yield more than 1 per cent of residue retained on a No. 60 sieve and not more than 10 per cent of residue retained on a No. 80 sieve.

Type III — (Soap scouring compound).

Matter volatile at 105° ±2° C. shall not exceed 6 per cent. Carbonated alkali, calculated as sodium carbonate (Na_2CO_3) shall not be less than 6 per cent nor more than 20 per cent. Free alkali, calculated as sodium hydroxide (NaOH), shall not exceed 0.1 per cent. Anhydrous soap and/or active anhydrous salt-free synthetic detergent shall be not less than 3 per cent nor more than 10 per cent. Insoluble siliceous material shall be not less than 60 per cent nor more than 90 per cent. The insoluble siliceous material shall not yield more than 1 per cent of residue retained on a No. 60 sieve and not more than 10 per cent of residue retained on a No. 80 sieve.

Scouring Powder for Glass (P-P-596a)

Shall be a fine, uniform powder, and shall be suitable for cleaning highly polished glass surfaces which must transmit light efficiently, such as cabin windows and windshields of aircraft.

The material shall clean glass surfaces satisfactorily without scratching the glass or leaving an oily or other film on the surface. The material shall be a uniform, free-flowing powder, shall be scented or unscented, and shall be white or light gray in color. Matter volatile at 105° ±2° C. shall not exceed 4 per cent. Alkali as alkaline salts (total alkalinity of matter insoluble in alcohol), calculated as sodium carbonate (Na_2CO_3), shall not exceed 5 per cent. Free alkali, calculated as sodium hydroxide (NaOH), shall not exceed 0.1 per cent. Insoluble siliceous material shall be not less than 85 per cent nor more than 93 per cent, and shall consist of ground feldspar or other insoluble siliceous abrasive that will not scratch highly polished glass surfaces. All of the insoluble siliceous material shall pass through a No. 200 sieve. Rosin, sugar, and foreign matter shall not be present. Anhydrous soda soap shall be not less than 4 per cent and shall be within 1 per cent of the difference between 100 and the sum of the matter volatile at 105° ±2° C., insoluble siliceous material, and alkali as alkaline salts.

Floor Oil; Mineral (P-O-361)

Floor oil shall be a straight-run petroleum distillate suitable for use on wood floors. It shall have no objectionable odor; and may be perfumed with cedar oil, pine oil, or similar materials, when specified. It shall be a clear well-defined petroleum oil free from sediment and other foreign material, and shall meet the following requirements:

The viscosity shall be not less than 70 nor more than 110 seconds (Saybolt Universal) at 100°F. The flash point shall be not less than 300°F. (open cup). The color shall be not darker than 3 N. P. A. (Lemon pale) (ASTM No. 3). The pour point shall be not more than 30°F. The saponification number shall not exceed 1.

Floor Wax; Solvent-Type, Liquid (With Resins) (P-W-134)

The liquid wax shall dry to a film that polishes easily to a hard lustrous flexible surface. It shall not be so highly colored as to stain the surface, and shall dry within 45 minutes to a semi-transparent, non-tacky film which shall show no signs of whiteness. It shall consist essentially of blended waxes with small amounts of resins in a volatile organic solvent. It shall be a heavy bodied liquid mixture of sufficient fluidity to permit freedom of application at 20° to 25° C. There shall be no appreciable settling of the suspended material. The liquid wax shall be smooth and shall be free from hard particles and granules.

Nonvolatile Matter (Total Solids).—There shall be not less than 11%, by weight, of nonvolatile matter in the liquid wax. The nonvolatile material shall meet the requirements shown in the table above:

Volatile Organic Solvent (Vehicle).—Shall consist of turpentine or volatile petroleum distillates, or any mixture thereof. The flash point of the volatile solvent shall be not less than 28° C. (closed cup).

Physical and Performance Tests.—Shall meet tests specified in paragraph F-2b.

Water Emulsion Floor Wax P-W-151b)

New proposed Federal Specification.

The floor wax shall dry to a non-tacky, lustrous finish without rubbing, buffing, or polishing. The film produced shall adhere firmly to the surface without checking, cracking, or peeling and shall be transparent and practically colorless. The floor wax shall be suitable for use on sealed floors and resilient flooring of all kinds. It shall have no objectionable odor. It shall be a stable aqueous colloidal emulsion of waxes. The emulsion shall be a free-flowing fluid that can readily be applied with an applicator such as lamb's wool, cotton cloth, or a mop to spread easily and uniformly.

The floor wax shall meet the following requirements:

Nonvolatile matter (total solids).—Shall be not less than 12 per cent.

Wax content and softening point.—The wax content of the total solids shall be not less than 65 per cent. by weight, and shall have a softening point of not less than 80° C.

Ash content (based on nonvolatile matter content).—Shall not exceed 3.5 per cent.

Volatile solvents. — Shall be free from petroleum distillates and other organic volatile solvents. The distillate shall consist of not less than 99 per cent of water.

Sediment.—Shall be not more than 2 per cent (by volume).

Alkalinity. — The pH range shall not be greater than 10.0 nor less than 7.0.

Stability. — Shall show no gelling or separation.

Physical and performance tests are also provided.

Floor Wax (P-W-158)

New proposed revised Federal Specification.

The product shall dry to a film that polishes easily to a hard lustrous flexible surface. It shall not be so highly colored as to stain the surface; and shall dry within 45 minutes to a semitransparent non-tacky film which shall show no signs of whiteness. Floor wax shall consist essentially of blended waxes in a volatile organic solvent. It shall be free from rosin.

Type I (liquid)—Shall be a heavy bodied liquid mixture of suitable consistency to permit freedom of application at 20° to 25° C. There shall be no appreciable settling of the suspended material. The liquid wax shall be smooth and shall be free from hard particles and granules. There shall be not less than 11 per cent, by weight, of non-volatile matter in the liquid wax. The nonvolatile matter shall meet the following requirements:

	Minimum	*Maximum*
Softening point	75°C.	—
Ash content, per cent..	—	0.5

The solvent shall consist of turpentine or volatile petroleum distillates, or any mixture thereof. The flash point of the volatile solvent shall be not less than 28° C. Physical and performance tests are also provided.

Type II (paste).—Shall be a semi-solid material at 20° to 22° C. There shall be no separation of liquid from paste. The paste shall be smooth and shall be free from hard particles and granules. There shall be not less than 20 per cent, by weight, of nonvolatile matter in the paste wax. The nonvolatile material shall meet the following requirements:

	Minimum	*Maximum*
Softening point	71°C.	—
Ash content, per cent..	—	0.5

The vehicle shall consist of turpentine or volatile petroleum distillates, or any mixture thereof. The flash point of the volatile solvent shall be not less than 28° C. Physical and performance tests are also provided.

Floor Sealer (Lacquer Type) (TT-S-171)

The manufacturer is given wide latitude in the selection of raw material and processes of manufacture, provided that the sealer produced meets the requirements and tests. The product, when applied in accordance with directions shall satisfactorily seal the pores of the wood leaving the wood surface in such condition as to provide a satisfactory foundation for a finishing material such as varnish, liquid or paste wax or water-emulsion wax. It shall be "natural" in color and of sufficient fluidity to permit application with a bristle brush or lamb's wool mop.

The floor sealer shall be a clear liquid free from sediment or suspended matter and shall be of such fluidity that no further thinning will be required. It shall meet the following requirements:

Nonvolatile matter.—Not less than 14 per cent.

Set-to-touch. In not more than 15 minutes.

Dry hard and tough.—In not more than 3 hours.

Nitrocellulose.—Not less than 20 per cent by weight of the nonvolatile content.

Toughness. — Air-dried film on metal shall withstand rapid bending over a rod 3 mm. (⅛ inch) in diameter.

Viscosity. — Not more than 0.220 poise.

Performance tests are also specified.

Wood and Cork Floor Sealers (TT-S-176a)

Floor sealers shall be furnished in one grade and two classes for use on wood and cork floors as follows: Class 1 — minimum nonvolatile content 40 per cent; Class 2 —minimum nonvolatile content 25 per cent. The manufacturer is given wide latitude in the selection of raw materials and processes of manufacture, provided that the sealer produced meets the requirements and tests described in this specification.

When applied in accordance with directions the product shall satisfactorily seal the pores of the flooring by absorption, leaving no apparent surface film and shall provide a satisfactory foundation for a finishing material such as varnish, liquid or paste wax, or water-emulsion wax. Unless otherwise specified, floor sealer shall be furnished

Requirements for Non-Volatile in P-W-134

	Minimum	*Maximum*
Softening Point	71° C	..
Acid Value	..	18
Saponification Value	40	85
Iodine Number (WIJS)	15	22
Ash Content, Per Cent	..	0.5

"natural" in color. Floor sealer shall have sufficient fluidity to permit application with a bristle brush or lamb's wool mop.

Both classes of sealers shall be nonpigmented materials and shall be capable of being thinned with turpentine or mineral spirits. The respective sealers shall meet the following requirements: *Nonvolatile matter*—Class 1, not less than 40 per cent; Class 2, not less than 25 per cent. *Set to touch*—in not less than 1 hour and not more than 4 hours. *Dry, hard and tough*—in not more than 18 hours. *Water test*—The sealer shall meet specified cold water test.

Toughness—Shall pass a 75 per cent Kauri reduction test at 25° C. (77° F.).

Flash point—Shall be not below 30° C. (86° F.). (Closed-cup.)

Viscosity at 25° C.—Class 1, not more than 0.50 poise; Class 2, not more than 0.220 poise.

Skinning—Shall be negligible when received and after 48 hours in a tightly closed half-filled container.

Odor—The odor in the can, during drying, and/or after drying shall not be abnormally offensive or disagreeable.

Performance tests are also specified.

Liquid Insecticide (Fly Spray) (O-I-541a)

The insecticide shall not cause irritation to man nor be poisonous to man when applied in the usual manner. It shall have no greater detrimental action on metal or paint surface than a specified test solvent. It shall have no objectionable odor. It shall be formulated from a petroleum distillate base, free from kerosene odor and practically free from all odor, shall be clear and free from suspended matter and shall contain active ingredients so that it will test not more than 2 per cent below the O.T.I. in average percentage knockdown and at least 16 per cent above the O.T.I. in average percentage kill.

Initial boiling point shall not be below 350° F. and end point not above 530° F. Flash point shall be not less than 125° F. (closed cup). No residual odor shall be present, under a specified test. The product shall meet specified test for staining properties and corrosion.

Liquid Insecticide (Household) (O-I-546a)

The specification follows closely along the lines of the specification for O-I-541a, with an addition requirement as follows, covering minimum pyrethrin content "There shall be not less than 0.13 gram of Pyrethrin I with the normally acompanying amount of Pyrethrin II in 100 ml. of the liquid insecticide. Any additional ingredients which when incorporated in the product will comply with the requirements of this specification may be used to bring the strength of the product up to the performance requirements." The performance test specifies that it must test not more than 2% below the O.T.I. in knockdown and at least equal to the O.T.I. in kill.

Shaving Cream and Soap (FFF-C-641)

Shaving soap and cream shall be of the following types and classes:

Type I. Soap:
- Class (A)—Cakes.
- Class (B)—Stick.
- Class (C)—Powder.

Type II. Cream:
- Class (A)—Lather cream.
- Class (B)—Brushless cream.

Shaving soaps, Type I, shall be high-grade products free of caustic alkalinity that yield a heavy, creamy lather that will remain moist upon the face until the shaving is completed. In the case of Class B (stick), the soap shall adhere to the face when the stick is moistened and rubbed thereon. In the case of class C (powder), the material shall be free-flowing and shall not cake in the container.

Lather cream — Class A, shall be a soft, uniform cream or paste free from free alkali. It shall distribute well into the bristles of a shaving brush and shall yield a

Detail Requirements for Shaving Soap

TYPE I	*Classes A and B cake and stick*		*Class C powder*	
	Min.	*Max.*	*Min.*	*Max.*
	Per Cent	*Per Cent*	*Per Cent*	*Per Cent*
Matter volatile at 105° C.	—	10	—	2
Matter insoluble in hot 95 per cent ethyl alcohol	—	.8	—	.8
Free alkali	—	None	—	None
Free fatty acids (calculated as stearic acid)	—	1.0	—	1.0
Matter insoluble in hot distilled water	—	.4	—	.4
Anhydrous soap (calculated as potash soap)	87	—	96	—
Amount passing a No. 20 sieve	—	—	100	—

Detail Requirements for Shaving Cream

TYPE II	*Class A lather cream*		*Class B brushless cream*	
	Min.	*Max.*	*Min.*	*Max.*
	Per Cent	*Per Cent*	*Per Cent*	*Per Cent*
Moisture (toluene distillation method)	—	50	—	70
Matter insoluble in hot 95 per cent ethyl alcohol	—	.3	—	—
Free alkali	—	None	—	None
Free fatty acid (calculated as stearic acid)	—	6.5	15	—
Matter insoluble in hot distilled water	—	.3	—	—
Anhydrous soap (calculated as potash soap)	40	—	—	—

heavy creamy lather that will remain moist upon the face until the shaving is completed.

Brushless cream—Class B shall be a soft, uniform cream or paste free from free alkali.

Type I. Shaving soap, Classes A, B, and C—

Color—shall be as specified by the purchaser. *Odor*—shall be pleasant and shall be as specified by the purchaser. *Lathering quality*—shall be satisfactory. Shall conform to the following test:

Shake 100 ml of a 0.2 per cent (based on the nonvolatile matter) solution of the soap (Type I, classes, A, B, and C and Type II, class A) in distilled water at room temperature in a stoppered 200-ml graduated cylinder 30 times in 15 seconds, and let stand at room temperature for 1 hour. The volume of foam above the liquid shall extend to the top of the cylinder and shall not decrease more than 10 per cent of its original volume in 1 hour.

Caking (Class C only)—The material shall be free-flowing and shall not cake in a closed container at room temperature.

Type II. Shaving cream. Classes A and B—

Color—shall be as specified by the purchaser. *Odor*—shall be pleasant and shall be as specified by the purchaser.

Lathering quality (Class A only)—shall be satisfactory. Shall conform to the test described above.

Type I. Shaving soap, Classes A, B, and C—shall conform to the detail requirements shown in the accompanying table.

The percentage of volatile matter shall be computed, and reported on the soap as received. The percentages of all other constituents shall be calculated and reported on an assumed volatile matter content of 10 per cent for Classes A and B and of 2 per cent for Class C.

Technical Trisodium Phosphate (O-T-671a)

Technical trisodium phosphate shall be a white, uniform product and may be either granular, flake, or crystalline.

It shall contain not less than 98 per cent of trisodium phosphate calculated as $Na_3PO_4.12H_2O$, from the total phosphoric anhydride (P_2O_5). It shall conform to the following detail requirements:

	Minimum Per Cent	*Maximum Per Cent*
Trisodium phosphate, calculated as $Na_3PO_4.12H_2O$, from total P_2O_5	98	—
Total alkalinity to methyl orange, calculated as Na_2O	16	19
Phosphoric anhydride (P_2O_5)	18.3	—
Matter insoluble in water	—	0.1

Federal Specification For Insecticide-Concentrate; Liquid, Water-Emulsifying (DDT—Nonexplosive Solvent—Emulsifying Agent) (O-I-558)

Appearance. — The insecticide-concentrate shall be clear, homogeneous, and free from particles of undissolved DDT crystals or foreign matter. The appearance of the concentrate shall not be affected when tested as specified.

Chlorine content.—The insecticide-concentrate shall contain a minimum of 120 milligrams of chlorine per milliliter.

Emulsion stability. — The emulsions formed shall show not more than 5 milliliters of separation when tested at 80°F., nor more than 10 milliliters of separation when tested at 120°F., 30 minutes after formation and after reformation.

Flash point.—The flash point of the finished concentrate shall be not below 140°F.

Staining properties. — There shall be no residual stain when the insecticide-concentrate is tested as described.

Residual odor.—There shall be no more than a slight, mild residual odor when the insecticide-concentrate is tested as described.

Distillation range.—The solvent shall have an initial point not less than 300°F., and an end point not higher than 550°F.

Effect on metals.—The insecticide-concentrate shall cause no more than a slight discoloration of mild steel strips.

Effect on plastics.—The insecticide-concentrate shall cause no crazing or softening of strips of polymethyl methacrylate.

Chlorine content.—With all ingredients at 77°F., pipette accurately 5 milliliters of the concentrate into a 100-milliliter volumetric flask and make to volume with 99 percent isopropyl alcohol. After mixing well, pipette accurately 10.0 milliliters of this alcoholic solution into a clean, dry, 300-milliliter flask with a standard tapered neck, add 15 milliliters of 99 percent isopropyl alcohol and 2.5 grams of metallic sodium cut into small pieces, and swirl the flask in order to mix its contents. Connect to a water-cooled reflux condenser and boil gently for at least ½ hour, swirling occasionally. Decompose the excess sodium by cautiously adding 10 milliliters of 50 percent isopropyl alcohol through the condenser at a rate of 1 to 2 drops per second. Boil for an additional 10 minutes and then add 60 milliliters of distilled water. Add 5 milliliters of 30 percent hydrogen peroxide, a few drops at a time, through the top of the condenser. Heat the mixture in the flask to boiling and boil for 15 minutes. Add 5 milliliters more of 30 percent hydrogen peroxide and boil again for 15 minutes. Cool to room temperature, add 2 to 3 drops of phenolphthalein solution, neutralize by adding nitric acid (1:1), and add 10 milliliters of diluted acid in excess. Cool and transfer the solution quantitatively to a small separatory funnel and shake vigorously with 15 milliliters of iso-amyl alcohol-ethyl ether solution (1:1). Draw off the aqueous layer into a second separatory funnel and extract again with another 15-milliliter portion of the extract mixture. Draw off the aqueous layer into a 400-milliliter beaker. Wash the two organic extracts successively with 10 milliliters of distilled water, and add the wash water to the beaker. Repeat with a second 10-milliliter portion of distilled water, and add dropwise, with stirring, a measured excess (25 ml. approximately) of 0.1*N* silver nitrate

solution. Coagulate the precipitate by heating on a steam bath for approximately ½ hour. Cool to room temperature and filter through a No. 42 Whatman filter paper and wash thoroughly with distilled water, receiving the filtrate in a 500-milliliter Erlenmeyer flask. Add 5 milliliters of ferric ammonium sulfate indicator solution and titrate the excess $AgNO_3$ with 0.1*N* KCNS solution. Compute the net number of milliliters of 0.1*N* $AgNO_3$ consumed by the sample.

Then if, a = milligrams of chlorine per milliliters of concentrate, and
b = net number of milliliters of 0.1*N* $AgNO_3$ consumed by the sample

$$a = b \times 7.092.$$

Note 1.—A blank determination (without sample) should be made following the exact procedure given above but limiting the 0.1*N* $AgNO_3$ solution to 5 milliliters in order to obtain a chloride correction value for all reagents used.

Stability at 80° ± 5°*F.*—Bring the sample of liquid concentrate and 80 milliliters of hard water to a temperature of 80° ± 5°F. Then pipette 20.0 milliliters of the concentrate into the hard water, forming a 1 to 4 dilution. Stir vigorously by hand (using a stirring rod) while the concentrate is being added and for 60 seconds afterwards. Record the time of initial formation. Pour the emulsion thus formed into a 100-milliliter graduated mixing cylinder, stopper the cylinder, and set it aside for exactly 30 minutes (note 2). Immediately after that period examine the emulsion carefully under strong transmitted light for signs of separation of phase or sediment and record the percentage separation by volume if present. Allow the emulsion to stand at the test temperature for 24 hours. Then reform the emulsion by inverting and righting the stoppered cylinder through 30 complete cycles. Exactly 30 minutes after the emulsion has been reformed, examine again under strong light and record the results.

Note 2.—Breaks in the emulsion are often difficult to detect when they first occur. If the emulsions are examined carefully once or twice during the 30-minute period after formation, observation of the darkening or lightening of the various portions will make the detection of the initial break easier. These examinations should be made by holding the cylinder in front of a strong light.

Hard water. — The hard water specified shall have the following composition:

$CaCl_2.2H_2O$	0.2345 gram.
$MgCl_2.6H_2O$	0.268 gram.
H_2O (distilled) to make	1 liter.

Stability at 120° ± 5° *F.*—The test procedure specified shall be repeated with the exceptions that (1) the ingredients and emulsion shall be kept at a temperature of 120° ± 5°F., and (2) the emulsions shall be reformed after 2 hours rather than 24 hours.

Flash point.—The flash point shall be determined with the Tag closed tester in accordance with method 110.1.3 of Federal Specification VV-L-791.

Staining properties and residual odor.—A 6-inch square of bleached cotton sheeting shall be immersed in the diluted concentrate (1 part of the concentrate to 4 parts of water), the sheeting thoroughly wetted, wrung to remove excess liquid, and hung up to dry for 48 hours in a well ventilated room. At the end of 48 hours, the treated section of sheeting shall be examined and compared to a similar untreated piece of sheeting for staining and residual odor.

Distillation range.—Approximately 250 grams of the concentrate shall be distilled under reduced pressure (29 inches of mercury approximately). Ten to fifteen grams of anhydrous sodium sulfate shall be added to the distillate, the container shaken, corked, and allowed to stand overnight to remove moisture. The distillate shall then be filtered and the filtrate distilled in accordance with method 100.1.6 of Federal Specification VV-L-791.

Effect on metals.—Place a polished strip of mild steel (S.A.E. 1020) in a clean, dry test tube, add sufficient liquid concentrate to immerse the specimen completely, and stopper the test tube with a clean cork. Place in an oven maintained at 122° ± 5°F. After 3 hours, remove the strip, rinse with sulfur-free acetone, and examine for signs of corrosion (discoloration or pitting).

Effect on plastics.—Place a strip of polymethyl methacrylate in a clean 300-milliliter Erlenmeyer flask. Add 100 milliliters of emulsion prepared as specified in paragraph F-3c(1), stopper the flask, and place on a mechanical agitator. After 4 hours, remove the strip, rinse under running water, allow to dry, and examine for any visual effects due to exposure to the emulsion.

Federal Specification For Dichlorodiphenyltrichloroethane (DDT) (O-D-370)

Types and Grades

DDT covered by this specification shall be of but one type and of the following grades, as specified in the invitation for bids:

Grade A.—Aerosol.

Grade B.—Technical.

TABLE I.—Chemical and Physical Properties (DDT).

Properties	*Grade A, aerosol*		*Grade B, technical*	
	Minimum	*Maximum*	*Minimum*	*Maximum*
Setting point, °C	.....	.....	89	.....
Melting point, ° C	103	.....	.....	.....
Organic chlorine, percent by weight	49.5	50.5	48	51
Ash content, percent by weight	.....	0.05	.....	0.5
Chloral hydrate, percent by weight	.....	0.025	.....	0.025
pH by extraction	5.5	7.5	5.0	8.0
Water soluble material, percent by weight	.....	0.05	.....	0.25
Cyclohexanone insoluble, milliliter	.....	.....	.....	0.2
Monofluorotrichloromethane insoluble, milliliter	.....	0.01	.....	.....

Material

Each grade shall comprise 2,2-bis (p-chlorophenyl)-1, 1,1-trichloroethane, free from added modifying agents, and shall comply with the detail requirements for the applicable grade.

Detail Requirements

E-1. *Chemical and physical properties.*—The chemical and physical properties shall conform to the requirements in table I.

Grade A, aerosol.—Grade A material shall be a fine white cystalline powder, free flowing and without lumps.

Grade B, technical.—Grade B material shall be a fine-to-medium granular powder with a white-to-cream color.

Setting point.—Transfer 30 ± 0.1 grams of sample into a heavy-wall, rimless, ignition tube of heat-resistant glass, 25 millimeters in inside diameter by 200 millimeters long (Corning No. 9860 or equivalent). The tube and its contents shall be supported in an oil bath maintained at 115° to 120°C. When the DDT has almost all become molten, a glass ring stirrer and an accurate thermometer graduated in fifths of a degree (A.S.T.M. standard thermometer 70° to 160°C. or equivalent) shall be fitted into the tube through a two-hole cork stopper. While the DDT is being heated, a round, wide-mouth, 8-ounce glass sample jar (approximately 2 inches in diameter and 5 inches high) shall be clamped upright in a water bath maintained at 70° ± 2°C. The jar shall be kept approximately 80 percent immersed throughout the entire determination and its mouth shall be fitted with a cork stopper into which one hole (just large enough to admit the tube containing the molten DDT) has been bored. When the DDT has melted completely and has reached a temperature of 115° to 120°C., transfer the test tube and its contents from the oil bath to the water bath-sample jar system, fitting the length of the tube down into the jar through the one-holed cork stopper so that the bottom of the tube is approximately 15 millimeters from the bottom of the sample jar. The liquefied sample shall now be stirred continuously, using the glass ring stirrer until the point of maximum super-cooling has been reached and the temperature has begun to rise. Thereafter, the stirring shall be by means of the thermometer. All stirring shall be at the approximate rate of 100 strokes per minute (1 up and down = 1 stroke) all strokes to be 3 to 4 centimeters in length, without breaking the upper surface of the sample. The liquefied material shall be stirred while it supercools. When the temperature drops to 89°C. a small amount of the sample of DDT being tested may be added as seed crystals if none have already formed in the test tube. After the material begins to crystallize, the temperature rises. At this point the stirring shall be stopped momentarily every 15 seconds and a temperature reading taken. The highest temperature reached atfer the point of maximum supercooling shall be taken as the setting point. The test shall be discontinued after two successively lower readings after the point of maximum supercooling.

Melting point. — Melting point shall be determined by the capillary tube method, using a Thiele-Dennis type, or equivalent, melting tube, heated at a rate not to exceed 0.5°C. per minute. The temperature at which the sample becomes completely clear shall be the melting point.

Organically bound chlorine.—Accurately weigh 1 gram of sample of DDT, transfer to a clean, dry 250-milliliter volumetric flask and add 40 milliliters of chlorine- and thiophene-free benzene. Shake until the DDT is dissolved and then make to volume with 99-percent isopropyl alcohol. Mix well and transfer a 25-milliliter aliquot to a clean, dry 300-milliliter flask with a standard tapered neck. Add 2.5 grams of metallic sodium cut into small pieces and swirl the flask in order to mix its contents. Connect to a water-cooled reflux condenser and boil gently at least ½ hour. Shake the flask occasionally. Decompose the excess sodium by cautiously adding 10 milliliters of 50 percent isopropyl alcohol through the condenser at a rate of one to two drops per second. Boil for an additional 10 minutes and then add 60 milliliters of distilled water. Cool to room temperature, add two to three drops of phenolphthalein solution, neutralize by adding nitric acid (1:1), and add 10 milliliters of the diluted acid in excess. Add dropwise with stirring of the solution a measured excess (25 ml. approximately) of 0.1N $AgNO_3$ solution. Coagulate the precipitate by heating on a steam bath for approximately ½ hour. Cool to room temperature and filter through a No. 42 Whatman filter paper and wash thoroughly with distilled water, receiving the filtrate in a 500-milliliter Erlenmeyer flask. Add 5 milliliters of ferric ammonium sulphate indicator and titrate the excess $AgNO_3$ with 0.1N KCNS solution. Compute the net number of milliliters of 0.1N $AgNO_3$ consumed by the sample. Calculate percent chlorine as follows:

$$\text{Percent chlorine} = \frac{\text{ml. 0.1N } AgNO_3 \text{ (consumed)} \times 3.547}{\text{weight of sample (grams)}}$$

Note:—A blank determination (without sample) should be made following the exact procedure given about but limiting the 0.1 $AgNO_3$ solution to 5 milliliters, in order to obtain a chloride correction value for all reagents used.

Ash.—Place a 5-gram sample in a weighed crucible. Burn off or vaporize the DDT under a hood with good ventilation, over a low flame or from a sand bath. When the organic material has been substantially volatilized, cool the crucible and add an excess of 10 percent sulfuric acid. The crucible shall be heated as above to dryness and then ignited in a muffle furnace for 1 hour at a temperature of 800° ± 50°C. Transfer the crucible to a desiccator, cool and weigh.

Determination of pH. — Transfer a 20=±0.1=gram sample of DDT to a 500-milliliter separatory funnel and dissolve in 100 milliliters of benzene. Add 50 milliliters

of freshly distilled, cooled, carbon-dioxide-free water, stopper, and shake the funnel and contents for 3 minutes. Allow the two phases to separate, and draw off the aqueous layer into a flask. Stopper this flask immediately. Repeat the aqueous extraction twice, using two successive 25-milliliter portions of freshly distilled, cooled, carbon-dioxide-free water. Determine the pH of this extract, using any suitable method. However, in the event of dispute, the results obtained with a calibrated pH electrometer shall govern. Reserve the remainder of this extract for the determination of chloral hydrate and water-soluble material.

Chloral hydrate. — Place 2 milliliters of a sodium hydroxide solution (40 g. in 100 ml. of solution) in a test tube, add 1 milliliter of colorless pyridine and 4 milliliters of the aqueous extract. Similarly treat 4 milliliters of a standard aqueous solution containing 0.05 milligram of chloral hydrate per milliliter in another tube. Shake the two tubes and heat in a boiling water bath for 1 minute. The red color in the pyridine layer of the sample under test shall not be darker than that of the standard.

Water soluble material.—Boil 50 milliliters of the aqueous extract down to a small volume, and dry the residue to constant weight at 105°C.

Cyclohexanone insoluble material.—Place 71 milliliters (67 g.) of cyclohexanone in a calibrated cone-shaped centrifuge tube described in method 300.3 of Federal Specification VV-L-791. Add 33 ± 0.1 grams of DDT, stopper, and shake until the material is dissolved as completely as possible. Centrifuge for 10 minutes at 1,500 revolutions per minute in an international size 1-5b centrifuge or equivalent, using a balanced system. The apparent volume of the separated solids is noted.

Monofluorotrichloromethane insoluble material.—Place 5.0 grams of DDT and 10.0 grams of cyclohexanone in a calibrated centrifuge tube, as above. Stopper, shake until the material is dissolved as completely as possible. Dilute to 100 milliliters with monofluorotrichloromethane. Stopper, shake and centrifuge. The solution in the tube should be clear and give not more than 0.01 milliliter of sediment.

Glass Cleaner, Liquid (P-G-406)

Liquid glass cleaner covered by this specification is intended primarily for use on windshields, windows and other glass surfaces and is not intended for use on transparent plastics.

The liquid compound for cleaning glass, covered by this specification, shall be of but one grade and of the following types, as specified in the invitation for bids: Type I.—Regular. Type II. Antifogging.

The component raw materials in the compound shall be suitable for the purpose intended and as specified hereinafter, and shall not include dyes, waxes, perfumes, ammonia, or inorganic alkalies.

It shall be stable under ordinary conditions of storage and handling and shall show no tendency to decompose, emulsify, or separate into layers at normal temperatures.

It shall be nonirritating to the skin and shall contain no toxic ingredients other than denaturants for alcohol.

The odor shall be no more objectionable than the comparison solution specified.

The flash point of the liquid shall be not less than 27°C. (80°F.).

The pH value of the liquid shall be not less than 7.0 nor more than 9.0 at 25°C.

The liquid shall not attack or produce more discoloration of aluminum alloys than that caused by the comparison solution.

The liquid shall not produce more softening, discoloration, or change in the surface appearance of enamel or lacquer finish than the comparison solution.

When the compound is properly applied to glass surfaces and polished, it shall leave the surface free from dust, grime, and ordinary soil material, and shall produce an appearance equal to or better than that produced by the comparison solution.

The residue on evaporation of 50 milliliters shall not exceed the following requirements:

	Residue in grams
Type I	0.005
Type II	0.005

The antifogging (type II) liquid shall produce antifogging characteristics on glass.

Tests shall be performed as described. Where the comparison solution is used, it shall have the following components.

Comparison solution	*Parts by volume*
Ethylene glycol	3
Iso-propyl alcohol	10
Ethyl alcohol (95 per cent)	27
Distilled water	60

Corrosion and discoloration of aluminum alloys.—Polish half of the area of one side of two 3- x 6-inch panels of aluminum alloy conforming to Federal Specification. Place several drops of the solution under test on the polished surface of one of the panels and cover with a watch glass. Treat the other panel in a similar manner using the comparison solution specified herein. At the end of 6 hours, remove the watch glasses, rinse the panels with water, and dry with compressed air. The panels shall then be observed for any evidence of attack or discoloration in excess of that caused by the comparison solution.

Softening and discoloration of protective films. — Four clean aluminum alloy panels conforming to Federal Specification shall be finished as shown in table I. The coat of zinc chromate primer shall be air-dried for 2 hours and then baked for 2 hours at 250°F. before application of the finish coats, and the lacquer shall be air-dried 1 hour between coats. The finished panels shall be air-dried for 2 hours, then baked for 18 hours at 66°C. (150°F.), and allowed to cool at room temperature. To panels 1A and 2A apply several drops of the cleaner and cover with a

Table I.—Preparation of panels for test on protective films

Panel	*1st Coat*	*Finish*
1A	Zinc chromate primer	One coat enamel
1B	Zinc chromate primer	One coat enamel
2A	Zinc chromate primer	Two coats lacquer
2B	Zinc chromate primer	Two coats lacquer

watch glass. To panels 1B and 2B apply several drops of the comparison solution. After a period of 6 hours, rinse each panel with distilled water, and blow dry with compressed air. The panels shall then be examined for discoloration, softening, or other defects in excess of that shown by panels in contact with the comparison solution.

Cleaning properties.—On two panels each of clear, plate glass, conforming to federal specification, dust pulverized clay until a thin uniform coating is obtained. Spray a mist coat of water on each panel to wet the clay and allow to dry 6 hours. Apply a mist coat of carbon tetrachloride containing 10 per cent of mineral oil (S.A.E. 30). Allow panels to air-dry 24 hours. To one panel apply the cleaner under test, spread over the surface with a rag and immediately wipe off and polish with a clean cloth. Using the same conditions of test, clean the other panel with the comparison solution specified herein and compare the two panels for cleaning properties of each solution.

Nonvolatile content. — Place 50 milliliters of the compound in a tared glass dish and heat on a steam bath to dryness, then in an oven at 100° to 105°C., (212° to 221°F.) to constant weight. Report the weight of the residue as grams per 50 milliliters of compound.

Antifogging.—Clean and polish a piece of clear, plate glass, approximately 6 x 8 inches, with a solution of 15 parts by volume of isopropyl alcohol in 85 parts distilled water. Then apply the compound with a cloth to one-half of the cleaned glass and polish to a clear surface with absorbent cotton or a soft cloth. Then place the glass vertically so that the treated and untreated halves of the glass plate are side by side horizontally. Spray the entire face of the glass panel with water in the form of droplets from an atomizer. On the portion of the glass treated with the type II compound, the drops of water should spread out and coalesce into a continuous film which will enable the ready reading of printed matter placed 6 inches behind the glass. The untreated portion of the glass should fog and impair the vision to a considerable extent. If both portions of the glass panel exhibit antifogging characteristics, the panel may have been too clean and it should be sprayed lightly with the oil solution used under cleaning properties above, allowed to dry, and the above test, beginning with the iso-propyl alcohol solution, repeated.

Dishwashing Compound MI L-D-15971 (SHIPS)

This military specification will be used as a basis for the proposed federal specification for dishwashing compound for machine use. Dishwashing compound shall be of the following types: Type I — for hard water; Type II—for soft water.

It shall be manufactured from materials of at least technical grade and shall include any free-flowing form such as powder, granule, and flake. It shall be suitable for use in spray-type mechanical dishwashing machines.

Not more than 5 per cent of the compound shall be retained on a No. 10 standard sieve.

Dishwashing compound shall be free from objectionable odor in either dry form or in solution.

Use of the product shall produce no abrasion or undue wear on surfaces of utensils, dishes, or dishwashing machines.

Alkaline salts used in formulating shall not be contaminated with toxic amounts of poisonous compounds such as those of arsenic, lead, mercury, antimony, etc.

The composition of the material shall be as shown in the table.

The solution shall have an initial pH of not less than 10.5 and not higher than 12.5. The addition of 10 ml of 0.1N hydrochloric acid shall not reduce the pH of the solution to less than 9.0.

When tested no foam or suds shall be detected.

The hard water shall be softened completely as indicated by the absence of turbidity.

The weight of precipitate obtained shall not exceed 15 mg.

Aluminum test specimens shall not be discolored or etched, nor shall a dense white film be formed on the surfaces. Slight dulling of the surfaces or formation of a faint white film on the test specimens, shall not be interpreted as evidence of non-conformity with this requirement.

Particle size of mechanical mixtures of ingredients shall be normally uniform in order to minimize segregation of the ingredients. Not less than 95.0 per cent of the ma-

(*Turn to Page* 255)

Composition of Dishwashing Compound

Constituents	*Percent (by weight)* *Minimum*	*Maximum*
Moisture	..	25
Alkali (as Na_2O)	30	48
Phosphates (as P_2O_5)	18	..
Silicates (as SiO_2)	8	..
Carbonates (as CO_2)	..	20
Insoluble matter	..	1
Total of P_2O_5, SiO_2, and CO_2	35	..
Total of Na_2O P_2O_5, SiO_2, and CO_2	72	..
Total of Na_2O, P_2O_5, SiO_2, CO_2 moisture and insoluble matter	97	..

Aerosol Test Method For Flying Insects

Official Specification and Standard Test Method of
The Chemical Specialties Manufacturers Association

EARLY in the development period of liquefied gas aerosols, starting in 1942 and especially following their appearance on the civilian market on a large scale in 1946, the need for a common method of biologically assaying aerosols became apparent. The literature records several testing techniques (among them 1, 2, 3, 4 and 5) employed by various investigators, but the necessary cooperative tests leading to the development of an official method were not initiated until 1947. The first series of cooperative aerosol tests among industrial and federal laboratories was organized and conducted in 1947 under the direction of the C.S.M.A. Aerosol Committee (6). The first series of tests employed a standard formulation in a standard dispenser at three dosage levels by the method in current usage in the cooperator's laboratory. Employing the results of the first cooperative test as a basis, a second series of cooperative tests was designed and conducted under the direction of the C.S.M.A.'s Insecticide Scientific Committee. In this second series of tests, made during the period May to October, 1948, four conventional low pressure aerosol formulations packaged in a standard dispenser were tested by nine cooperating laboratories. In these tests (7), the use of free flying flies, a standard dosage and a standard testing technique were employed. The method here presented is based on the outcome of both the first and second series of cooperative tests and, insofar as practical, follows the Official Peet-Grady (8) Test Procedure (both large and small group). This technique for testing aerosols should be regarded only as a practical test method (not a research method) designed for the comparison of formulations in the dispensers in which they will be employed by the consumer. It is restricted at present for use against house flies, although it is felt that with modifications in dosage the general procedure would be satisfactory for other flying insects. Further cooperative tests will be necessary before the method can be adopted in final form.

II. Apparatus

A. Reference Insecticide.

The reference insecticide shall be the Tentative Official Test Aerosol (TOTA) prepared by the C.S.M.A., Inc. The TOTA must be dispensed from the container in which it is supplied with particular care being taken that the TOTA dispenser employed meets the specifications designated on its label.

B. Dispenser for Experimental Aerosol.

No restriction is made on the dispenser employed in connection with the experimental aerosol formulation. However, it should be noted that the test results apply only to the experimental formulation as dispensed from the particular unit employed. In reporting results, the dispenser used with the experimental aerosol shall be specified.

C. Test Insect.

The test insect shall be the house fly (*Musca domestica, L.*) reared from a strain mixed under the supervision of the C.S.M.A. healthy test groups having an average age of four days are to be used and individual flies in the test groups shall be not less than three nor more than six days old at the time of testing. The strain shall be of such susceptibility that the Official Test Insecticide (OTI) will cause a 24-hour mortality of 30 to 55 per cent and with approximately 95 per cent of the flies paralyzed at ten minutes following spray application by the Peet-Grady method.

D. Fly Cages.

Cages of any convenient type may be used if they provide at least one cubic inch of space per fly and have at least two sides and the top screened. It is suggested that the base be square in shape to provide maximum floor space. The floor of the cage is preferably detachable to facilitate cleaning and inserting a paper floor covering. The cages are constructed of wood or other suitable material and 16 mesh wire screening, and are fitted with a sleeve opening, rubber membrane, or a door.

E. Rearing Room.

This room may be of any convenient size constructed so as to be free from strong drafts, and maintained at a temperature of 82 $\pm$2 degrees Fahrenheit and relative humidity of 50 $\pm$5 per cent. It should be separate from the testing room in order to eliminate the possibility of traces of insecticide coming in contact with the test insects. Ventilation should be provided to reduce odors and gases from fermenting media.

F. Testing Room.

This room may be of any convenient size, capable of holding the aerosol test chamber (Peet-Grady Chamber of large chamber)

and permitting adequate additional space for the operator to handle the test efficiently. While conducting tests, this room shall be maintained at a temperature of 75 to 85 degrees F. It is suggested that the relative humidity be held between 40 and 70 per cent. Since the exhaust fan of the chamber will move relatively large quantities of air, the temperature of the air entering this room should be approximately that specified above.

G. Aerosol Test Chamber.

The test chamber shall be a Peet-Grady Chamber as specified in the Peet-Grady Method, or a larger chamber meeting the general specifications of the Peet-Grady Chamber. In the case of larger chambers, it is recommended that the dimensions be such as to approximate a normal room.

H. Exhaust Fan.

An exhaust fan moving not less than 1000 cubic feet of air per minute through the Peet-Grady Chamber, or a fan of proportionately larger capacity for testing chambers larger than the Peet-Grady Chamber shall be used to ventilate the chamber after each test. It shall be arranged with adequate piping to exhaust the chamber vapors outside of the building.

I. Insecticide Paper.

Unsized, nonglazed, absorbent paper, such as brown kraft or gray bogus, shall be used to cover the chamber floor. No special weight is specified although 60 to 80-lb. gray bogus paper has been found excellent. In certain laboratories testing chamber ceilings and walls have been covered with cardboard, kraft paper, or other material suitably arranged for easy renewal to reduce chamber cleaning difficulties.

J. Apparatus for Picking Up Flies.

Any convenient means of picking up the paralyzed flies without injuring or appreciably disturbing them may be used. If a vacuum device is used, it must produce gentle suction, have a sufficiently large receptacle to prevent crowding of the flies, and be cleaned after each test with the same materials used in cleaning the chamber.

In laboratories in which it is felt desirable to capture unparalyzed flies at the end of the test exposure period, suitable means of capturing the flies without injury in a clean apparatus shall be employed.

III. Procedure

A. Rearing and Handling Flies.

In this procedure, eggs are transferred to media suitable for the development of larvae, the pupae are collected from the media and placed inside of cages, and the adult flies emerge and remain in these cages until the day of testing.

(*a*) *Larval media*: The preferred containers are cylindrical glass battery jars approximately 6 in. in diameter and 9 in. high. For one jar, mix 340 gm. (12 oz.) standard dry larval media, (1) with approximately 750 cc. of an aqueous suspension containing 15 gm. moist cake yeast and 10 cc. non-diastatic Diamalt, (2). Mix thoroughly until a loose fluffy media is obtained, transfer it to the battery jar without packing, cover with cloth and set in the insectary. The amount of suspension required for best rearing results will need to be determined in each laboratory and it may be varied in order to prevent mold growth. It is suggested the media be prepared in the late afternoon of the day before egg collection.

(1) Mixed quarterly according to C.S.M.A. specifications by the Ralston Purina Co., St. Louis, Mo., on the basis of orders received by the first of January, April, July and October, in 50 lb. bags. Terms—pay on receipt of invoice.

(2) Standard Brands, Inc. products. These can be obtained from local distributors in most cases.

(*b*) *Eggs*: Eggs are collected for a period not longer than 16 hours from food dishes or other oviposition media in cages containing mature flies not more than 8 days old. It is suggested that fresh oviposition media be placed in fly cages in the late afternoon and eggs be collected early on the following morning. After collecting the eggs they must be measured and seeded without delay. Wash the eggs in tap water at room temperature and measure 2000 eggs as accurately as possible. This may be done by allowing the eggs to settle in a calibrated pipette or graduate (0.1 cc. settled eggs contains about 700) or the eggs can be filtered and measured in calibrated pits or cells. Use 10 cc. tap water to measure and to scatter the eggs in a ½ in. pit located in the center of the jar of larval media. Cover the eggs with loose media, replace the cloth covers on the jars, and set jars in the insectary so that at least 1.5 in. separates each jar to permit free air circulation. The maximum temperature in the jar (about 3 days later) must not exceed 130°F. Under normal conditions, more than 85 per cent of the eggs should hatch within 36 hours of the time they are laid.

(*c*) *Pupae*: Mature larvae migrate to the top portion of the media and normally all larvae will have pupated by the seventh day after seeding eggs. When this occurs, the portion of media containing pupae is loosened, poured into a shallow tray, and air dried at room temperature. An electric fan may be used to hasten drying. Pupae are separated from the dry media by sprinkling the pupae-media mixture on an inclined tray or chute set in front of an air blast such as that from an electric fan. The pupae must be handled gently and as little as possible in order to avoid injury. Under normal conditions, at least 95 per cent of flies will emerge from the pupae.

The separated pupae are thoroughly mixed and weighed in groups as test units and each group is placed in a shallow dish which is, in turn, placed in a cage which provides at least 1 cu. in. of space per pupa. If the large group procedure is used the test unit consists of approximately 500 pupae. If the small group procedure is used, more than 500 pupae are placed in stock cages and adult flies are sampled prior to testing.

(*d*) *Adult Flies*: Each cage is supplied daily with a dish containing at least 15 cc. of a 50 per cent dilution of milk with water for each 100 flies and so prepared as to prevent the flies from drowning. A 40 per cent formalin solution at the rate of 1/1500 delays souring of milk for several hours. Satisfactory food must be available to the flies at all times. The series of test units is kept until the second day of oviposition (usually the 14th day after the culture was prepared) when they are ready for testing. Under normal rearing conditions, at least 80 adult flies should be obtained from each 100 eggs seeded.

B. Testing Flies.

Before a fly aerosol test is started, the aerosol test chamber must be clean and have clean paper on the floor, all ports and openings must be closed, and the temperature must be 82 ±2° F., and all windows must be equally shaded. In chambers where walls and ceilings are covered with paper or other material, contamination, if present, must be at sufficiently low levels not to influence test results. Chambers are considered to be contaminated and unsatisfactory for test use when test flies, held in them for a 12 to 16 hour period with food but without insecticide treatment, show mortalities in excess of 10 per cent, or when over 10 per cent of the flies are paralyzed within 30 minutes after liberation. It is recommended that laboratories make a standard practice of taking contamination observations, employing a normal fly test group, following each day's testing. In both the large and small group procedures, only flies which are capable of flying may be liberated into the aerosol test chamber. In the large group procedure, all flies in one cage are used in a single test; but in the small group method, a sample of 100 ±5 flies is used in each test. Samples may be taken by liberating the flies directly into the chamber and continuing until about 10 per cent of flies remain in the stock cage. These are discarded. Samples may be taken also by discarding the first 100 flies and then counting 50 flies into each of a series of small cages. One hundred flies are counted into the last cage and, working backward, 50 flies are added to each. Flies remaining in the stock cage are discarded. The order of spray treatments must be randomized.

After liberating the flies in the chamber, and with the bomb at 82 ±2° F., a total of 8 to 12 grams of aerosol mixture per 1000 cubic feet shall be applied in a continuous flow for 10 seconds. The dispenser nozzle may be oscillated slowly to effect uniform distribution of the aerosol mist within the test chamber. The mist shall not be directed onto chamber wall and ceiling surfaces. The test dispenser shall be weighed before and after the liberation of the aerosol mixture and the actual weight of material introduced shall be recorded. The chamber is closed at a constant temperature in the range of 82 ±2° F. for 15 minutes from the time the aerosol mist is introduced.

Observations shall be made as to the number of flies "down" (paralyzed) at 5 and 10 minutes following insecticide application. These observations are especially important because with conventional formulations practically all flies "down" at 15 minutes fail to recover during the 24-hour observation period. At the end of 15 minutes the ports are opened and the chamber is ventilated by means of the exhaust fan while the flies are collected.

The "down" flies are picked up and transferred immediately to clean cages meeting the specifications of Section II, Paragraph D. These flies may be counted when they are picked up or later, depending upon which time is more convenient. During the subsequent 24-hour recovery period, the cage is placed in the rearing room and supplied with an adequate quantity of a 5 per cent sugar solution, arranged so that the top of the dish is not more than ¾

(Suggested Label for Tentative Official Test Aerosol)

Front Panel

C.S.M.A.
Seal

1949-1950
TENTATIVE OFFICIAL
TEST AEROSOL

Household Type Insecticide Aerosol

Not To Be Used After January 1, 1951

Chemical Specialties
Manufacturers Association, Inc.

110 East 42nd Street
New York 17, N .Y.

(Suggested Label for Tentative Official Test Aerosol)

Back Panel

METHOD OF USING THE TENTATIVE OFFICAL TEST AEROSOL

Follow the procedure in accordance with the C.S.-M.A. Tentative Official Aerosol Test Method for Flying Insects.

Store at 50-90°F.

IMPORTANT — Read carefully the accompanying printed enclosure. Results are not valid unless they conform to these prescribed conditions.

For official use, the T.O.T.A. dispenser must be undamaged, show no signs of leakage, and have a delivery rate of 8 to 12 grams per 10 seconds at 82 ±2°F. The dispenser must be discarded when 80 per cent of its original contents have been used or when the dispenser weighs less than 160 grams.

inch above the floor of the cage and the flies cannot drown in it. A gauze-wrapped ball of cotton saturated with 5 per cent sugar solution is also satisfactory.

The "up" (unparalyzed) flies in the chamber at the end of the 15-minute exposure period must be counted and either discarded or captured.

After a test is completed all toxic residues must be removed from the chamber or, if allowed to remain, must be at sufficiently low levels so as not to affect test results. Where chamber surfaces permit, wiping with a clean cloth saturated with alcohol containing 10 per cent acetone will remove a number of toxic residues.

C. Assembling the Data

The number of "up" flies must be counted and recorded at the end of the 15-minute exposure period. The dead flies are counted 24 hours (±1 hour) later, preferably by removing them from the recovery cage. Only flies that show no sign of life upon being touched may be counted as dead. If the "down" flies were counted as they were collected, the sum of the "down" and the "up" flies yields the total flies in the test. If the "down" flies were not counted as collected, the recovered flies are killed by placing the cage in an oven at 170° F. for a few minutes, after which they are counted. The sum of recovered and dead flies yields the "down" flies and this sum added to the "up" flies yields the total flies used in the test. The *Aerosol Test Knockdown Mortality* is the per cent dead of total flies. In the *Aerosol Test Knockdown Mortality* calculation, the "up" flies at the end of the 15-minute exposure period are considered to be alive at the end of the 24-hour observation period. The *Aerosol Test Knockdowns* are the per cent "down" of total flies at 5, 10 and 15 minutes.

In the preceding paragraph it is assumed that the "up" flies at 15 minutes are counted and discarded, and not captured and held for a 24-hour mortality observation. If these flies are captured, the *Aerosol Test Mortality* calculation can be made, and this includes the 24-hour dead of the "up" flies. In such a procedure, the captured flies must be held in a separate recovery cage under conditions specified for the "down" flies, and the 24-hour mortality count must be taken in a similar manner. It is also necessary that the TOTA run in conjunction with the so-treated experimental samples receive identical treatment. In reporting results, the above terminology must be rigidly adhered to in order to clearly designate whether the "up" flies were captured and held for observation or whether they were assumed to be alive at 24 hours.

The mortality and knockdown definitions are summarized in equation form as follows:

$$(1)\ \textit{Aerosol Test Knockdown Mortality} = \frac{\textit{Dead "Down" Flies} \times 100}{\text{Total Flies}}$$

$$(2)\ \textit{Aerosol Test Mortality} = \frac{[(\textit{Dead "Down" Flies}) + (\textit{Dead "Up" Flies})] \times 100}{\text{Total Flies}}$$

$$(3)\ \textit{Aerosol Test Knockdown, 5, 10 or 15 minutes} = \frac{\textit{"Down" Flies} \times 100}{\text{Total Flies}}$$

IV. Conditions for Official Evaluation

1. The tests shall be conducted in accordance with the procedure previously described.

2. At least two cultures of flies, meeting Peet-Grady specifications, shall be used in making an official evaluation.

3. Cages showing a combined mortality and crippling greater than eight per cent on the day of test shall not be used.

4. In the small group procedure, using approximately 100 flies per test, no more than three unknown samples may be tested in conjunction with one TOTA in any one series. Ten tests are run on the TOTA and on each of the unknowns in parallel; that is, test each spray the same number of times on any one day. The samples of a series must be randomized in the order of testing.

5. The large group procedure using approximately 500 flies per test shall be conducted in the same manner as outlined for the small group procedure with the exception that five rather than ten tests are required.

6. The *Aerosol Test Knockdown Mortality* and/or *Aerosol Test Mortality*, and *Aerosol Test Knockdown* (15 minutes) of the unknown sample shall be reported as "meeting the standard" if its average mortality and knockdown, is equal to or greater than that of the TOTA run in conjunction with it. "Equal to" shall be interpreted as meaning that the results with the unknown do not differ by more than 5 percentage points from the results obtained with the TOTA. If an unknown sample shows a mortality or knockdown less than the TOTA but within the allowable 5 percentage point margin, the average dosage of the unknown must not exceed that of the TOTA.

7. In no case shall numerical values be reported or any letter grade designations be assigned to the test samples as a measurement of the mortality or knockdown.

8. The *Tentative Official Test Aerosol* (TOTA) is restricted to use in the above described procedure and shall be used only as a reference insecticide in house fly aerosol testing.

References

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Peet-Grady Method

Official Method of the Chemical Specialties Manufacturers Assn. for Evaluating Liquid Household Insecticides.

I. INTRODUCTION

THE Peet-Grady Method was adopted as an official test in 1932, and has since been improved in certain details, all improvements have been officially accepted after satisfactory trials. This method of test is a means of determining the relative efficiency of contact insecticides dissolved in fly spray base oils. As a biological test it is subject to variations which accompany the reaction of living organisms and should be employed under the supervision of a person familiar with the biological testing of insecticides. In order to measure with reasonable tolerance the relative position of different insecticides, the test is designed to be used in conjunction with the "Official Test Insecticide" as the basis of comparison.

Two methods, or procedures, are permitted. The Small Group method is substantially the same as outlined at the time the test was adopted in 1932 while the Large Group method was officially adopted in 1938. Both methods are being used extensively, and if correctly employed, evaluation by either test may be expected to be in reasonable agreement.

II. APPARATUS

A. Reference Insecticide

The reference insecticide shall be the current Official Test Insecticide (OTI) prepared by the Chemical Specialties Manufacturers Assn. each year. The OTI must not be diluted or changed in any manner.

B. Atomizer

The Special Atomizer No. 5004, constructed by the DeVilbiss Company, Toledo, Ohio, for the C.S.M.A. Standardization Committee must be used. This atomizer shall be operated with air free of oil, dust particles, or condensed moisture, and maintained at a constant pressure of 12.5 ±0.5 per sq. in. measured by a gage of not more than 30 pounds capacity or a manometer. The atomizer shall deliver 12 cc. of OTI in 24 seconds (tolerance ±1 second) and this should be checked frequently. Atomizers failing to meet this test should be repaired by the manufacturer or replaced.

C. Test Insect

The test insect shall be the house fly (*Musca domestica*, L.) reared from a strain mixed under the supervision of the C.S.M.A. once each year. Healthy test groups having an average age of 4 days are to be used. Individual flies in the test groups shall be not less than 3 nor more than 6 days old at the time of testing. The strain shall be of such susceptibility that the OTI will cause a mortality of from 30 to 55 per cent.

D. Fly Cages

Cages of any convenient type may be used if they provide at least 1 cubic inch of space per fly and at least 2 sides and the top are screened. It is suggested that the base be square in shape to provide maximum floor space. The floor of the cage is preferably detachable, to facilitate cleaning and inserting a paper floor covering. The cages are constructed of wood or other suitable material and 16 mesh wire screening, and are fitted with a sleeve opening, rubber membrane, or a door.

E. Rearing Room

This room may be of any convenient size constructed so as to be free from strong drafts, and maintained at a temperature of 82 ±2 degrees Fahrenheit and relative humidity of 50 ±5 per cent. It should be separate from the testing room in order to eliminate the possibility of traces of insecticide coming in contact with the test insects. Ventilation should be provided to reduce odors and gases from fermenting media.

F. Testing Room

This room may be of any convenient size capable of holding the standard Peet-Grady Chamber and permitting adequate additional space for the operator to handle the test efficiently. While conducting tests, this room shall be maintained at a temperature of 75 to 85 degrees Fahrenheit. It is suggested that relative humidity be held between 40 and 70 per cent. Since the exhaust fan of the chamber will move relatively large quantities of air, the temperature of the air entering this room should be approximately that specified above.

G. Peet-Grady Test Chamber

The Test Chamber shall be rigidly constructed of wood, metal, or other suitable material. The inner surface shall be smooth, impervious to the usual household type of insecticide, and as free from cracks, projections, ledges, etc., as possible. The chamber shall be a 6-ft. cube by internal measurements, with a tolerance of plus or minus 1 in. for any dimension. One wall shall contain a tight-fitting door large enough for a man to enter conveniently, with the interior side flush with the wall when closed. One or more of the walls, or the ceiling, shall contain an observation window, preferably on two opposite walls. Illumination is provided by means of a glass window in the ceiling above which is

placed an electric light of such intensity as to permit flies to be observed easily. An opening covered with 10-mesh wire screen shall be connected to an exhaust fan duct and the size and the location of this opening in relation to ventilation openings in the wall must be such that thorough ventilation of the chamber is obtained. Preferably, the exhaust opening should be 1 sq. ft. or larger and located in or near the ceiling. Air inlet openings may be ports approximately 6 x 6 in. in size, covered with screen on the inside and provided with tight fitting hinged covers on the outside. Four ports located near the 4 lower corners, or 8 ports located near both the 4 upper and 4 lower corners are satisfactory, but the ventilation ports should not be on the same level as the exhaust port. The entrance door may be used alone or in conjunction with the ventilation ports if a screen door is provided and thorough ventilation of the chamber is obtained. If the temperature of the air used to ventilate the chamber is lower than 80° F., heaters may be used to obtain the temperature of 82 ±2° F. required during the test period. Such heaters must be removed before a test is started. Openings shall be provided for the introduction of the insecticide; these must be so constructed and so located that uniform distribution of the spray is effected without undue ventilation of the chamber. These openings may be round 1 in. holes located not less than 6 in. or more than 12 in. from the ceiling and 18 in. from the nearest corner on each wall, or a single hole may be provided in the center of each wall 6 to 12 inches from ceiling.

H. Exhaust Fan

An exhaust fan moving not less than 1,000 cu. ft. of air through the chamber per min. shall be used to ventilate the chamber after each test. It shall be arranged with adequate piping to exhaust the chamber vapors outside of the building.

I. Insecticide Paper

Unsized, non-glazed absorbent paper, such as brown kraft or gray bogus, shall be used to cover the chamber floor. Two overlapping sheets of 36-40 in. width or one sheet of 6 ft. width may be employed. No special weight is specified although 60-80 lb. gray bogus paper has been found excellent.

J. Apparatus for Picking Up Flies

Any convenient means of picking up the paralyzed flies without injuring or appreciably disturbing them may be used. If a vacuum device is used, it must produce gentle suction, have a sufficiently large receptacle to prevent crowding of the flies, and it shall be cleaned after each test with the same materials used in cleaning the chamber.

III. PROCEDURE

A. Rearing and Handling Flies

In this procedure, eggs are transferred to media suitable for the development of larvae, the pupae are collected from the media and placed inside of cages, and the adult flies emerge and remain in these cages until the day of testing.

Larval media: The preferred containers are cylindrical glass battery jars approximately 6 in. in diameter and 9 in. high. For one jar, mix 340 gm. (12 oz.) standard dry larval media, (1) with approximately 750 cc. of an aqueous suspension containing 15 gm. moist cake yeast and 10 cc. non-diastatic Diamalt, (2). Mix thoroughly until a loose, fluffy media is obtained, transfer it to the battery jar without packing, cover with cloth and set in the insectary. The amount of suspension required for best rearing results will need be determined in each laboratory and it may be varied in order to prevent mold growth. It is suggested the media be prepared in the late afternoon of the day before egg collection.

(1) Mixed quarterly according to C.S.M.A. specifications by the Ralston Purina Co., St. Louis, Mo., on the basis of orders received by the first of January, April, July and October, in 50 lb. bags. Terms—pay on receipt of invoice.

(2) Standard Brands Inc. products. These can be obtained from local distributors in most cases.

Eggs: Eggs are collected for a period not longer than 16 hours from food dishes or other oviposition media in cages containing mature flies not more than 8 days old. It is suggested that fresh oviposition media be placed in fly cages in the late afternoon and eggs be collected early on the following morning. After collecting the eggs they must be measured and seeded without delay. Wash the eggs in tap water at room temperature and measure 2000 eggs as accurately as possible. This may be done by allowing the eggs to settle in a calibrated pipette or graduate (0.1 cc. settled eggs contains about 700) or the eggs can be filtered and measured in calibrated pits or cells. Use 10 cc. tap water to measure and to scatter the eggs in a ½ in. pit located in the center of the jar of larval media. Cover the eggs with loose media, replace the cloth covers on the jars, and set jars in the insectary so that at least 1.5 in. separates each jar to permit free air circulation. The maximum temperature in the jar (about 3 days later) must not exceed 130° F. Under normal conditions, more than 85 per cent of the eggs should hatch within 36 hours of the time they are laid.

Pupae: Mature larvae migrate to the top portion of the media and normally all larvae will have pupated by the seventh day after seeding eggs. When this occurs, the portion of media containing pupae is loosened, poured into a shallow tray, and air dried at room temperature. An electric fan may be used to hasten drying. Pupae are separated from the dry media by sprinkling the pupae-media mixture on an inclined tray or chute set in front of an air blast such as that from an electric fan. The pupae must be handled gently and as little as possible in order to avoid injury. Under normal conditions, at least 95 per cent of flies will emerge from the pupae.

The separated pupae are thoroughly mixed and weighed in

groups as test units and each group is placed in a shallow dish which is, in turn, placed in a cage which provides at least 1 cu. in. of space per pupae. If the large group procedure is used the test unit consists of approximately 500 pupae. If the small group procedure is used, more than 500 pupae are placed in stock cages and adult flies are sampled prior to testing.

Adult Flies: Each cage is supplied daily with a dish containing at least 15 cc. of a 50 per cent dilution of milk with water for each 100 flies and so prepared as to prevent the flies from drowning. A 40 per cent formalin solution at the rate of 1/1500 delays souring of milk for several hours. Satisfactory food must be available to the flies at all times. The series of test units is kept until the second day of oviposition (usually the 14th day after the culture was prepared) when they are ready for testing. Under normal rearing conditions, at least 80 adult flies should be otained from each 100 eggs seeded.

B. Testing Flies

Before a fly spray test is started, the Peet-Grady chamber must be clean and have clean paper on the floor, all ports and openings must be closed, the temperature must be 82 ±2° F., and all windows must be equally shaded. In both procedures, only flies which are capable of flying may be liberated into the Peet-Grady chamber. In the large group procedure all flies in one cage are used in a single test, but in the small group method a sample of 100 ±5 flies is used in each test. Samples may be taken by liberating the flies directly into the chamber and continuing until about 10 per cent of flies remain in the stock cage. These are discarded. Samples may be taken also by discarding the first 100 flies and then counting 50 flies into each of a series of small cages. One hundred flies are counted into the last cage and then, starting with the next to last cage and working backwards, 50 flies are added to each. Flies remaining in the stock cage are discarded. The order of spray treatments must be randomized as discussed in section IV, paragraph 6.

After liberating the flies in the chamber, a total of 12 cc. of insecticide shall be applied within one minute, at 12.5 lb. pressure, and in equal quantities through each spray hole. The nozzle of the atomizer shall be oscillated slowly in a horizontal plane to avoid spraying walls and ceilings and to effect uniform distribution of the spray. The chamber is kept closed at a constant temperature in the range of 82 ±2° F. for 10 min. from the time the spraying is started. At the end of 10 min. the ports are opened and the chamber is ventilated by means of the exhaust fan while the flies are collected.

The paralyzed flies are picked up and transferred immediately to clean cages meeting the specifications of section II, paragraph D. These flies may be counted when they are picked up or later, depending upon which time is most convenient. During the subsequent 24-hr. recovery period, the cage is placed in the rearing room and supplied with an adequate quantity of a 5 per cent sugar solution, arranged so that the top of the dish is not more than ¾ inch above the floor of the cage and flies cannot drown in it. A gauze-wrapped ball of cotton saturated with 5 per cent sugar solution is also satisfactory.

The unparalyzed flies in the chamber at the end of the 10-min. exposure period must be counted and discarded.

After a test is completed, all toxic residues must be removed from the chamber. The paper on the floor must be renewed and the inside walls and ceiling must be cleaned thoroughly. Wiping with a clean cloth saturated with alcohol containing 10 per cent acetone or washing with soap and water will remove a number of toxic residues. However, special cleaning precautions may be required after a test with a new chemical compound in order to remove its toxic residue.

C. Assembling the Data

The number of unparalyzed flies must be counted and recorded at the end of the 10-min. exposure period. The dead flies are counted 24 hrs. (±1 hr.) later, preferably by removing them from the recovery cage. Only flies that show no sign of life upon being touched may be counted as dead. If paralyzed flies were counted as they were collected, the sum of paralyzed and unparalyzed flies yields the total flies in the test. If paralyzed flies were not counted as collected, the recovered flies are killed by placing the cage in an oven at 170° F. for a few minutes, after which they are counted. The sum of recovered and dead flies yields the paralyzed flies and this sum added to the unparalyzed flies yields the total flies used in the test. The mortality is the per cent dead of total flies and the knockdown is the per cent paralyzed of total flies.

IV. CONDITIONS FOR OFFICIAL EVALUATION

1. The tests shall be conducted in accordance with the procedure previously described.
2. At least 2 cultures of flies shall be used in making an official evaluation.
3. Cages showing a combined mortality and crippling greater than 8 per cent on the day of test shall not be used.
4. An unknown insecticide to be officially rated shall have a knockdown percentage equal to that of the OTI with a tolerance of minus 2.
5. The kill by the OTI shall fall between 30 and 55 per cent in all tests. The toxicity of an unknown spray shall be reported by a grade letter, obtained by subtracting the average kill by the OTI from the average kill by the unknown spray and comparing this result with the following figures:

Grade Letter		*Kill Difference*
AA	:	+16 or greater
A	:	+6 to +15
B	:	+5 to —5

6. In the small group procedure no more than 2 unknown samples may be tested in conjunction with one OTI in any one series. Ten tests are run on the OTI and on each of the unknowns in parallel; that is, test each spray the same number of times on flies of the same culture and test all sprays the same number of times on any one day. The samples of a series must be randomized in the order of testing. For example, number the samples and the OTI, and test them in the order 1, 2, 3; 2, 1, 3; 3, 2, 1, etc., until each has been tested ten times. After the mortality data are obtained, calculate the average kills and determine the difference between that of the unknowns and that of the OTI. In order for these differences to be valid, the standard error of the mean difference between the average OTI kill and the average unknown kill must be less than 3. If it is 3 or greater, the test results were too variable and to make the results valid, additional paired tests must be run to reduce the figure to a value less than 3. The following example illustrates the arrangement of test data and calculations described in the preceding paragraphs. When two unknown samples and the OTI are tested in series, the first table should consist of differences between Sample No. 1 and the OTI, the second table should show differences between Sample 2 and the O.T.I.

6. Small Group Method

Pair	Culture	Date	% Dead Sample 1	% Dead OTI	Difference[1]	Deviation[2]	Deviation Squared
1	C	3-8	58	50	+8	+4	16
2	C	8	62	55	+7	+3	9
3	C	8	60	54	+6	+2	4
4	C	8	52	52	+0	—4	16
5	C	8	49	46	+3	—1	1
6	E	9	61	54	+7	+3	9
7	E	9	46	49	—3	—7	49
8	E	9	53	51	+2	—2	4
9	E	9	57	54	+3	—1	1
10	E	9	53	46	+7	+3	9
			55. 1M	51. 1M	+4 MD	0	118 Sum d²

[1] Sample 1 kill minus OTI kill.
[2] Deviation from the mean difference (MD).
The mean difference (MD) between Sample 1 kill and the OTI kill is 4.0

$$\text{The standard error of MD} = \sqrt{\frac{\text{Sum } d^2}{n-1}} \Big/ \sqrt{n} = \sqrt{\frac{118}{9}} \Big/ \sqrt{10} = 1.14$$

1.14 is less than 3, thus indicating the test has been properly conducted. The letter n (in formula at left) denotes the number of paired tests. This number is always 10 except when it is necessary to run additional tests to reduce the standard error of the mean difference to 3 or less.

The percentage kill of Sample 1 minus the percentage kill of OTI is +4, therefore, Sample 1 is a "B" grade insecticide.

7. Large Group Method

Cage No.	CULTURE E Nov. 21 Sample	% Dead	CULTURE F Nov. 23 Sample	% Dead
1	OTI	43	2	69
2	1	44	3	65
3	3	57	OTI	54
4	2	63	3	58
5	3	52	1	45
6	OTI	47	2	77
7	1	39	1	54
8	2	71	OTI	46

Sample	Mortalities	Average	Rating	Grade
OTI	43, 47, 54, 46	47.5		
1	44, 39, 45, 54	45.5	— 2.0	B
2	63, 71, 69, 77	70.0	+22.5	AA
3	57, 52, 65, 58	58.0	+10.5	A

7. In the Large Group procedure the evaluation is carried out as follows:

The evaluation is based on the difference in mortality of the OTI and the unknown as determined by a minimum of 4 tests. The order of testing shall be random and replicated OTI tests on any culture shall agree within 10 points. The accompanying example illustrates one arrangement of testing, the computation of the test results, and the grading of the sprays.

C.S.M.A. SPECIFICATIONS

Official Specifications of the Chemical Specialties Manufacturers Association for

INSECTICIDES and DISINFECTANTS

OFFICIAL SPECIFICATIONS Liquid Household Spray Insecticide

(Adopted December, 1936)

1. A household spray oil type insecticide shall be harmless to man and warm blooded household animals, when used as directed.

2. When sprayed, as directed, it shall not stain fabrics, wall paper and general household furnishings, that are not stained by dry cleaning fluid.

3. When used in the customary manner it shall not contaminate closed packages of food materials commonly found in homes.

4. It shall not corrode metals.

5. It shall have no objectionable odor, and no particular odor shall be specified.

6. It shall have a flashpoint not less than 125° F. when tested in the Tagliabue closed cup.

7. It is recommended that it be purchased on a direct competitive basis with the Official Test Insecticide of the Chemical Specialties Manufacturers Association, Inc., by using the method of test specified in literature accompanying the Official Test Insecticide.

8. The Association hereby adopts the following grades (the plus or minus figures shown therein designating the points over or under the Official Test Control Insecticide when the "Unknown" and the "Control" are tested at the same time in the same manner):

Designation	*Grade*	*Kill Classification*
AA	Excellent	+ 16 or higher
A	Very Good	+ 6 to + 15
B	Equal to Official Test Insecticide	+ 5 to — 5

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1: Standard Specifications for Liquid Hypochlorites Disinfectant, Deodorant and Germicide

Composition—Liquid hypochlorites are available in three forms: *one*, sodium hypochlorite alkaline with sodium hydrate, sodium carbonate or the other alkaline salts; *two*, hypochlorites which are essentially sodium hypochlorite and alkaline with calcium hydrate; and *three*, calcium hypochlorite solutions alkaline with calcium hydrate. A delivery of any one of these shall be satisfactory unless otherwise specified.

Physical Requirements — The hypochlorite solution shall be a homogeneous liquid. It shall be miscible with water of zero hardness at 20° C. (68° F.) in all proportions. It shall be ready for dilution when delivered.

Chemical Requirements—The available chlorine content which shall not be less than 2.5 per cent by weight shall be clearly stated on the label. Its rate of deterioration shall not be more than 10 per cent of its original available chlorine content when stored in the original container for six months in a cool, dark place at maximum temperature of 68° F. (20° C.).

Identification—Each container shall be marked with the name of the material, the brand (if any) of the material, the name of the manufacturer, net contents therein, and date of manufacture.

Packing—The hypochlorite shall be delivered in standard commercial containers of the size as called for in the schedule. Each container holding one gallon or more shall be stoppered with a closure having vent.

2: Standard Specifications for Pine Oil Disinfectant

1. The product shall be manufactured from pure steam distilled pine oil and emulsifying agent and remain clear and homogeneous under normal and reasonable conditions of storage.

2. It shall contain not less than 60 per cent by weight steam distilled pine oil.

3. It shall contain not more than 10 per cent water.

4. The phenol coefficient shall be determined by the F.D.A. Method of Test against B. typhosus and be clearly stated on the label attached to each shipping container.

5. It shall not contain kerosene or other petroleum distillates.

6. The product shall make a stable emulsion in water of zero hardness at 20° C. (68° F.) when diluted at the rate of 5 per cent. The emulsion shall stand for at least twenty-four hours showing no sign of oil float (unsaponified or clear free oil).

3: Standard Specifications for Emulsifying Type Coal Tar Disinfectant

1. It shall be made from phenols of coal tar or petroleum origin, or combinations of such phenols with coal tar oils, and an emulsifying agent.

2. It shall contain not less than 65 per cent by weight of phenols and coal tar oils.

3. It shall contain not over 10 per cent of water, by weight.

4. It shall not contain kerosene or any petroleum distillates other than phenols of petroleum origin.

5. The phenol coefficient shall be determined by the Food and Drug Administration Method using B. typhosus as test organism, and shall be clearly stated on the label attached to each shipping container.[1]

6. It shall make milky emulsions with water of zero hardness at 20° C. (68° F.) when diluted in the ratio of 5 parts of disinfectant to 95 parts of water for disinfectants having phenol coefficients of 10 or under; and in the ratio of 2 parts of disinfectant to 98 parts of water for disinfectants having phenol coefficients of over 10. These emulsions shall show not more than a trace of oily float or sediment when stored for 5 hours at room temperature.

7. It shall remain limpid, showing no sign of naphthalene crystallization down to 0° C. in 3 hours.

8. It shall contain less than 5 per cent of benzophenol.

9. The disinfectant, under normal and reasonable conditions of storage, shall remain stable and show no loss of germicidal value.

Certification and Labeling

10. The following form of statement on labels[2], invoices, etc., is recommended:

"The .....Company certifies this phenolic disinfectant (emulsifying type) to conform to all requirements of the standard adopted by the CHEMICAL SPECIALTIES MANUFACTURERS ASSOCIATION, INC., and recorded as Commercial Standard CS70-.... by the National Bureau of Standards of the U. S. Department of Commerce. Phenol coefficient....."

[1] This type of disinfectant is available with phenol coefficients ranging from 2 to 30, and higher. Contract buyers should specify the phenol coefficient desired.

[2] When used on labels this statement is in addition to, and not in lieu of, the ingredient statement required by the Insecticide Act of 1910.

4: Standard Specifications for Cresylic Disinfectants

Scope

1. This standard covers materials, physical and chemical properties, and certification of quality of phenolic disinfectant (soluble type), classified under two groups as follows:

(a) Group I—Phenolic disinfectants having phenol coefficients from 1.5 to 5[1].

(b) Group II—Phenolic disinfectants having phenol coefficients above 5.

Detail Requirements (Group I)

2. Group I disinfectants shall be made from cresol or cresylic acid of coal tar or petroleum origin, and a dissolving agent.

3. Group I disinfectants shall contain not less than 50 per cent of cresol or cresylic acid, as determined by the method prescribed in U. S. Pharmacopoeia XI for the assay of cresol in the Saponated Solution of Cresol.

4. Group I disinfectants shall contain not more than 25 per cent by weight of inert ingredients (water plus glycerine, and organic solvents, if any).

5. The phenol coefficient of Group I disinfectants shall be determined by the Food and Drug Administration Method using B. typhosus as the test-organism, and shall be clearly stated on the label attached to each shipping container.

6. Group I disinfectants shall contain less than 5 per cent of benzophenol.

7. Group I disinfectants shall make clear solutions with water of zero hardness at 20° C. (68° F.) within the concentration range of from 1 to 4 per cent; such solutions, when kept in closed containers, shall remain either practically clear or become only slightly opalescent when allowed to stand for 24 hours at 20° C. (68° F.) away from direct light.

8. Group I disinfectants shall show no soap separation when cooled down to 0° C. and held at this temperature for 3 hours.

Detail Requirements (Group II)

9. Group II disinfectants shall be made from phenols of coal tar or petroleum origin, and a dissolving agent.

10. Group II disinfectants shall contain not less than 50 per cent of phenols[2].

11. Group II disinfectants shall contain not more than 25 per cent by weight of inert ingredients (water plus glycerine and organic solvents, if any).

12. The phenol coefficients of Group II disinfectants shall be determined by the Food and Drug Administration Method using B. typhosus as the test-organism, and shall be clearly stated on the label attached to each shipping container.

13. Group II disinfectants shall contain less than 5 per cent of benzophenol.

14. Group II disinfectants shall make clear solutions with water of zero hardness at 20° C. (68° F.) at concentrations of 2 per cent or less; such solutions, when kept in closed containers, shall remain either practically clear or become only slightly opalescent when allowed to stand for 24 hours at 20° C. (68° F.) away from direct light.

15. Group II disinfectants shall show no soap separation when cooled down to 0° C. and held at this temperature for 3 hours.

Certification and Labeling

16. The following form of statement on labels[3], invoices, etc., is recommended:

"The .....Company certifies this disinfectant to conform to all requirements for (Group I)
(Group II) of the standard adopted by the CHEMICAL SPECIALTIES MANUFACTURERS ASSOCIATION, INC., and recorded as Commercial Standard CS71-...., by the National Bureau of Standards of the U. S. Department of Commerce.
Phenol Coefficient:....."

[1] The disinfectants of Group I fall within the type commonly designated "Cresylic disinfectants."

[2] A satisfactory method of assay of all possible types of disinfectants comprised by Group II is not available, but work on the subject is in progress.

[3] When used on labels, this statement is in addition to, and not in lieu of, the ingredient statement required by the Insecticide Act of 1910.

C.S.M.A. DEFENSE EMERGENCY SPECIFICATION "A" FOR PHENOLIC DISINFECTANT EMULSIFYING TYPE

Purpose

1. The purpose of this defense emergency specification is to provide a minimum specification for quality, as a basis for understanding and voluntary guarantees between producers, distributors, and users in the purchase of the commodities covered by these specifications, and as a foundation for confidence on the part of purchasers that the efficacy of the material is that which may be expected of phenolic disinfectant (emulsifying type), manufactured in conformity with a recognized specification of a national trade association.

Scope

2. This specification covers materials, physical and chemical properties, and certification of quality of phenolic disinfectant (emulsifying type).

Detail Requirements

3. The disinfectant shall not contain kerosene or any petroleum distillate other than phenols of petroleum origin.

4. The phenol coefficient shall be determined by the Food and Drug Administration method, using B. typhosus as test organism, and shall be clearly stated on the label attached to each shipping container.

5. The disinfectant shall make milky emulsions with water of zero hardness at 20° C. (68° F.) when diluted in the ratio of 5 parts of disinfectant to 95 parts of water for disinfectants having phenol coefficients of 10 or under; and in the ratio of 2 parts of disinfectant to 98 parts parts of water for disinfectants having phenol coefficients of over 10. These emulsions shall show not more than a trace of oily float or sediment when stored for 5 hours at room temperature.

6. The disinfectant shall remain limpid, showing no sign of naphthalene crystallization down to 0° C. in 3 hours.

7. The disinfectant shall contain less than 5 per cent of benzophenol (phenol, C_6H_5OH).

8. The disinfectant, under normal and reasonable conditions of storage, shall remain stable and show no loss of germicidal value.

Certification and Labeling

9. The following form of statement on labels*, invoices, etc., is recommended:

The ..... Company certifies this phenolic disinfectant (emulsifying type) to conform to all requirements of a specification adopted and recorded as C.S.M.A. Defense Emerby the Chemical Specialties Manufacturers Association, Inc.

* When used on labels, this statement is in addition to, and not in lieu of, the ingredient statement required by the Insecticide Act of 1910.

C.S.M.A. DEFENSE EMERGENCY SPECIFICATION "B" FOR PHENOLIC DISINFECTANT SOLUBLE TYPE

Purpose

1. The purpose of this defense emergency specification is to provide a minimum specification for quality, as a basis for understanding and voluntary guarantees between producers, distributors, and users in the purchase of the commodities covered by these specifications, and as a foundation for confidence on the part of purchasers that the efficacy of the material is that which may be expected of phenolic disinfectant (soluble type), manufactured in conformity with a recognized specification of a national trade association.

Scope

2. This specification covers materials, physical and chemical properties and certification of quality of phenolic disinfectant, soluble type.

General Requirements

3. The disinfectant shall be made from phenols of coal tar or petroleum origin and a dissolving agent.

4. The disinfectant shall not contain kerosene or any petroleum distillates other than phenols of petroleum origin.

5. The phenol coefficient shall be determined by the Food and Drug Administration method, using B. typhosus as test organism, and shall be clearly stated on the label attached to each shipping container.

6. The disinfectant shall make either a clear or opalescent mixture with dis-

tilled water at 20° C. (68° F.) within the concentration range of 1 to 4 per cent; when opalescent, it shall become practically clear upon addition of a few drops of a 10 per cent KOH solution.

7. It shall show no soap separation when cooled down to 0° C. and held at this temperature for 3 hours.

Certification and Labeling

8. The following form of statement on labels*, invoices, etc., is recommended:

The ..... Company certifies this phenolic disinfectant (soluble type) to conform to all requirements of a specification adopted and recorded as C.S.M.A. Defense Emergency Disinfectant Specification "B" by the Chemical Specialties Manufacturers Association, Inc.

* When used on labels, this statement is in addition to, and not in lieu of, the ingredient statement required by the Insecticide Act of 1910.

C.S.M.A. SPECIFICATION "C" FOR PHENOLIC DISINFECTANT FROM SYNTHETIC PHENOLS

Purpose

1. The purpose of this commercial standard is to provide a minimum specification for quality, as a basis for understanding and voluntary guarantees between producers, distributors, and users in the purchase of the commodity covered by these specifications, and as a foundation for confidence on the part of purchasers that the efficacy of the material is that which may be expected of phenol disinfectant from synthetic phenols, manufactured in conformity with a recognized specification of a national trade association.

Scope

2. This specification covers materials, physical and chemical properties and certification of quality of phenolic disinfectants of synthetic origin.

Detail Requirements

3. The disinfectant shall be made from synthetic phenols of the type comprising alkyl, aryl, and aralkyl phenols, or their chlorinated or brominated derivatives, and a dissolving or emulsifying agent.

4. The phenol coefficient shall be determined by the Food and Drug Administration method, using B. typhosus as the test organism, and shall be clearly stated on the label attached to each shipping container.

5. The disinfectant, under normal and reasonable conditions of storage, shall remain stable and show no loss of germicidal value.

6. The disinfectant shall make stable emulsions or solutions with water of zero hardness at 20° C. (68° F.); they shall show not more than a trace of float or sediment when stored for 5 hours at room temperature.

Certification and Labeling

7. The following form of statement on labels*, invoices, etc., is recommended:

The ..... Company certifies this phenolic disinfectant from synthetic phenols to conform to all requirements of a specification adopted and recorded as C.S.M.A. Specification "C" by the Chemical Specialties Manufacturers Association, Inc.

* When used on labels, this statement is in addition to, and not in lieu of, the ingredient statement required by the Insecticide Act of 1910.

C.S.M.A. SPECIFICATION "D" FOR FORTIFIED PHENOLIC DISINFECTANT

Purpose

1. The purpose of this commercial standard is to provide a minimum specification for quality, as a basis for understanding and voluntary guarantees between producers, distributors, and users in the purchase of the commodities covered by these specifications, and as a foundation for confidence on the part of purchasers that the efficacy of the material is that which may be expected of a fortified phenolic disinfectant manufactured in conformity with a recognized specification of a national trade association.

Scope

2. This standard covers materials, physical and chemical properties, and certification of quality of fortified phenolic disinfectant of both the emulsifying and soluble types.

Detail Requirements

3. The disinfectant shall be made from phenols of coal tar or petroleum origin, plus synthetic phenols of the class comprising alkyl, aryl or aralkyl phenols or their chlorinated or brominated derivatives, and a dissolving agent.

4. The proportion of the synthetic phenol shall be not more than 25 per cent by weight of the total phenolic content.

5. The disinfectant shall not contain kerosene or any petroleum distillates other than phenols of petroleum origin.

6. The phenol coefficient shall be determined by the Food and Drug Administration method, using B. typhosus as test organism, and shall be clearly stated on the label attached to each shipping container.

7. The disinfectant, under normal and reasonable conditions of storage, shall remain stable and show no loss of germicidal value.

8. The disinfectant shall make stable emulsions or solutions with water of zero hardness at 20° C. (68° F.); they shall show not more than a trace of float or sediment when stored for 5 hours at room temperature.

Certification and Labeling

9. The following form of statement on labels*, invoices, etc., is recommended:

The ..... Company certifies this fortified phenolic disinfectant to conform to all requirements of a specification adopted and recorded as C.S.M.A. Disinfectant Specification "D," by the Chemical Specialties Manufacturers Association, Inc.

* When used on labels, this statement is in addition to, and not in lieu of, the ingredient statement required by the Insecticide Act of 1910.

SIMPLIFIED PRACTICE RECOMMENDATION FOR SIZES OF GLASS CONTAINERS AND PACKAGES FOR HOUSEHOLD INSECTICIDES

(Liquid Spray Type)

Table 1.—Retail Packages

Package Size	*Exhibition No. in Limitation Order L-103*	*Overflow Capacity*	*Maximum Weight of Glass*	*Height*	*Maximum Outside Diam. of Body*	*G.C.A. 400 Finish Size*	*Packages per Shipping Case*
Fluid Ozs.		*Fluid Ozs.*	*Avoir. Ozs.*	*Inches*	*Inches*	*M.M.*	
1 pt.	80-50	16-31/32	11	6-41/64 overall	2-63/64	28	24
1 qt.	80-75	33-53/64	17½	8-1/8 overall	3-47/64	28	12
	80-76	33-59/64	17¾	8-1/8 overall	3-47/64	33	
1 gal. bottle	80-96	135⅝	60	12-9/16 overall	5-63/64	38	4
1 gal. jug	51.98	136	48	9-3/8 bottom to neck bead	6-41/64	38	

NOTES:

1. Finishes are interchangeable in accordance with provisions of the order.

2. When lower glass weights are used, adjustment to make correct capacity shall be made in the "B" dimension.

3. Profiles similar to those illustrated for Exhibit Series 80-00 for Boston Round Bottles and Series 51-00 for Glass Jugs as shown in WPB Limitation Order L-103 shall be maintained consistent with "C" and "D" dimensions.

4. Containers shall be round.

5. Bottom stippling optional.

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PERFUME SPECIFICATIONS

(*From Page 213*)

Descriptive Characteristics

Solubility:

Benzyl Benzoate: Soluble in all proportions.

Fixed Oils: Soluble in all proportions in most fixed oils.

Glycerine: Practically insoluble.

Mineral Oil: Soluble, although frequently the solutions are opalescent.

Propylene Glycol: Slightly soluble.

Stability:

Relatively stable to dilute alkali and weak organic acids.

Containers

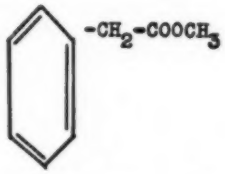
Should be shipped in glass or tin-lined containers. Good quality galvanized containers are suitable when long storage is not contemplated.

Storage

Store preferably in tight, full containers, in a cool place protected from light.

Specifications and Standards
METHYL PHENYL ACETATE

$C_9H_{10}O_2$ Mol. Wt. 150.17



The methyl ester of phenylacetic acid has not been found to occur naturally in volatile oils. The free acid and other esters of phenylacetic acid have been found in a limited number of essential oils.

As a general rule, the simple esters of phenylacetic acid have pronounced honey-like odors and are used for both flavor and odor effects. The free acid and lower esters are also used extensively for syntheses in the pharmaceutical industry.

Preparation

By methanolic esterfication of the corresponding acid or nitrile.

Physical & Chemical Constants

Color and Appearance: Colorless or nearly colorless liquid having an intense odor suggestive of honey.

Specific Gravity at 25°/25°C.: 1.061—1.066.

Refractive Index at 20°C.: 1.5050—1.5090.

Halogens: Negative. Proceed as directed for the determination of chlorinated compounds. (See G)

Acid Value: Maximum 1.

Proceed as directed for the determination of acid value. (See E)

Purity: Minimum 98% as $C_9H_{10}O_2$.

Proceed as directed for the determination of esters using approximately 1.0 gm. sample accurately weighed. (See A)

The number of cc. of half-normal potassium hydroxide solution consumed in the saponification, multiplied by 0.07509, indicates the number of grams of ester calculated as Methyl Phenyl Acetate in the sample taken for assay.

Solubility in Alcohol: Soluble in 6 volumes of 60% alcohol.

Descriptive Characteristics

Solubility:

Diethyl Phthalate: Soluble in all proportions.

Benzyl Benozate: Soluble in all proportions.

Mineral Oil: Insoluble.

Fixed Oils: Soluble in all proportions in most fixed and volatile oils.

Alcohol: Soluble in all proportions.

Propylene Glycol: Insoluble.

Water: Insoluble.

Glycerine: Insoluble.

Stability:

Alkali: Unstable in the presence of alkaline materials due to saponification.

Acid: Moderately stable to organic acids and dilute mineral acids.

Containers

Can be shipped in glass, aluminum, tin-lined or steel containers. Good quality galvanized or lacquer lined containers are also suitable provided long storage is not contemplated.

Storage

Store preferably in a cool dry place protected from light.

FEDERAL SPECIFICATIONS

(*From Page 232*)

terial shall fall within one of the following ranges:

Range	*Passing*	*Retained*
A	No. 10	and No. 110
B	No. 16	and No. 170
C	No. 20	and No. 200
D	No. 25	and No. 270

The material shall be thoroughly mixed and present no evidence of segregation of individual constituents, or of lumping or caking.

For water containing hardness (as calcium carbonate) of the range plus 7 to 14 grains per gallon (plus 120 to 240 ppm), use 5 ounces of type I compound for each 10 gallons of wash water. For water containing hardness in the range plus 14 to 20 grains per gallon (plus 240 to 342 ppm), use 7 ounces for each 10 gallons of wash water.

To determine the amount needed, multiply the indicated dosage at the predetermined hardness by the number of gallons of wash tank capacity and divide by 10. (1) If water hardness is 7 grains per gallon or less, use type II compound. (2) During operation of the dishwashing machine, the compound should be replenished by adding about one-fourth of the original amount every 10 minutes while tableware is being washed."

Three and one half ounces of type II compound should be added to each 10 gallons of wash water having a hardness (as calcium carbonate) of 7 grains per gallon (120 ppm) or less. To determine the amount needed, multiply 3½ ounces by the number of gallons of wash tank capacity and divide by 10.

(1) If water hardness is above 7 grains per gallon, use type I compound.

(2) During operation of the dishwashing machine, the compound should be replenished by adding about one-fourth of the original amount every 10 minutes while tableware is being washed."

AEROSOL TEST METHOD

(*From Page 236*)

(5) Goodhue, L. D., and Sullivan, W. N. 1943. Making and testing aerosols. In "Laboratory Procedures in Studies of the Chemical Control of Insects." Amer. Assoc. Adv. Sci. Pub. 20: 157-162.

(6) Peterson, H. E. 1948. Results of preliminary tests on developing a tentative method for biologically testing insecticidal aerosols. March 5. Unpublished.

(7) Campau, E. J., and Starr, D. F. 1949. Second C.S.M.A. Cooperative Aerosol Test. Unpublished. (To be prepared.)

(8) Peet-Grady Method. 1948. *Soap Blue Book*: 183-185.

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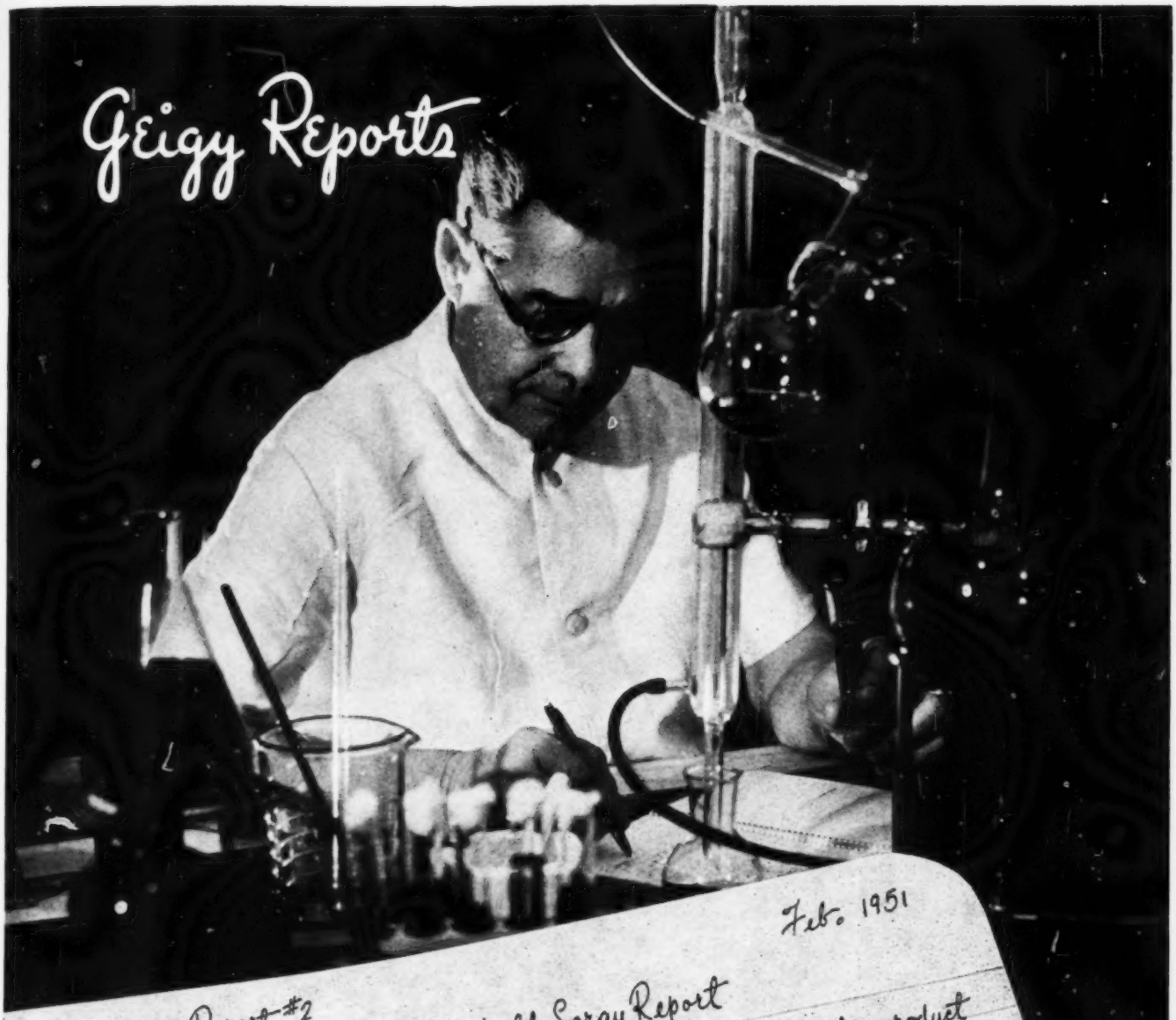

Feb. 1951

Laboratory Report #2

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